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"Petrositis" *Clarence H. Smith, M.D., F.A.C.S.*

Between Mental Health and Mental Disease—Fear of Cancer, Nascent
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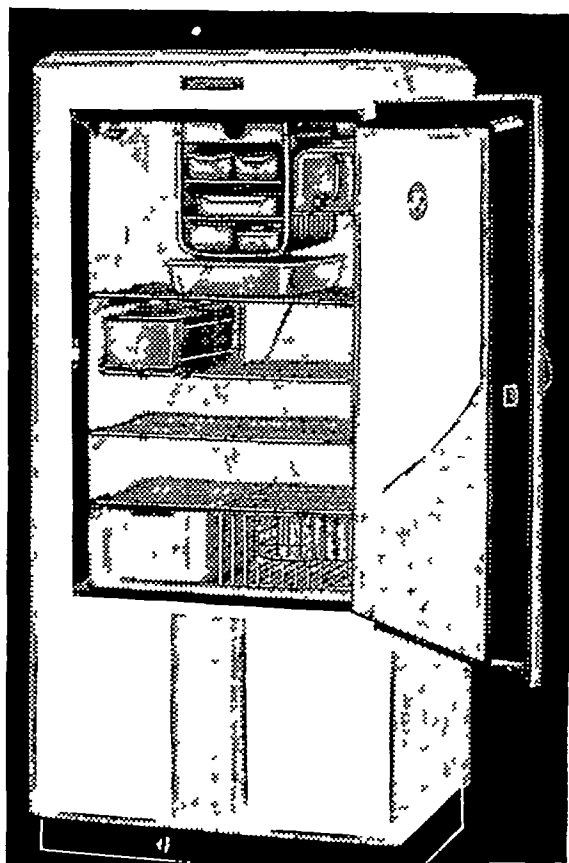
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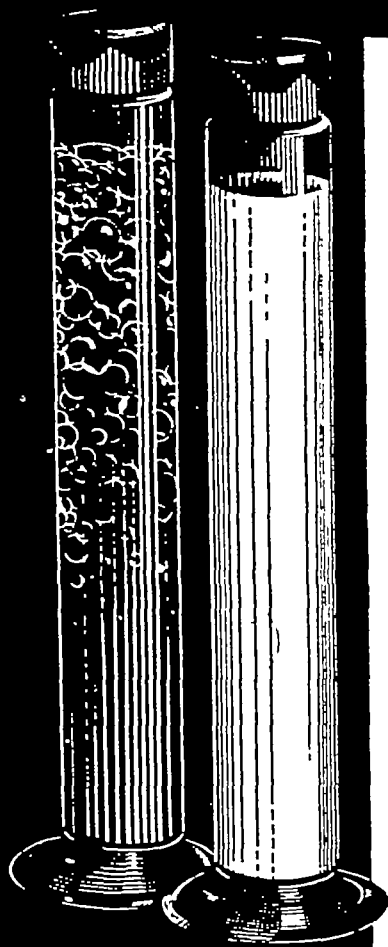
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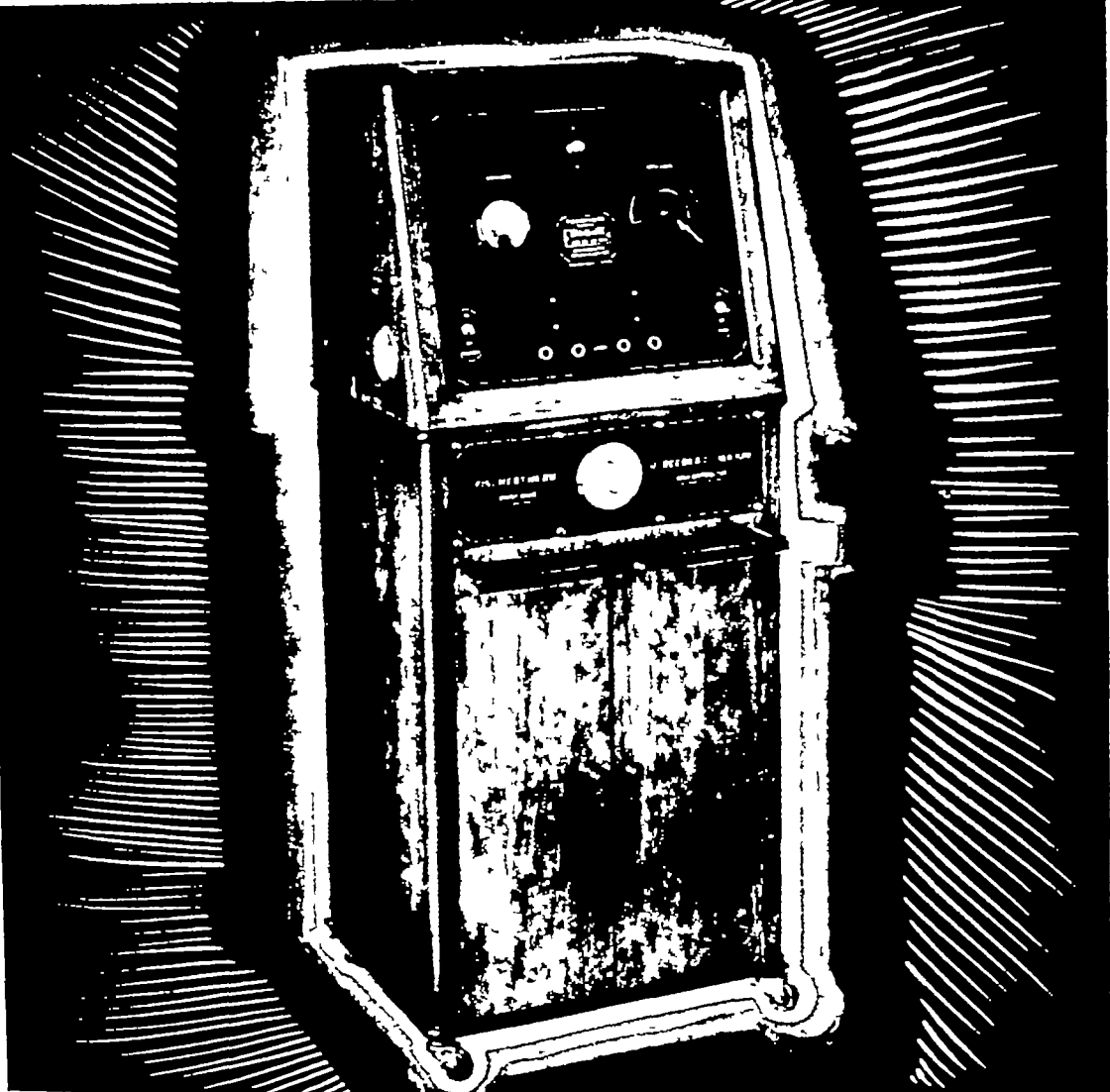
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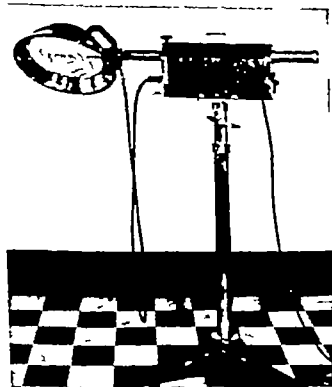
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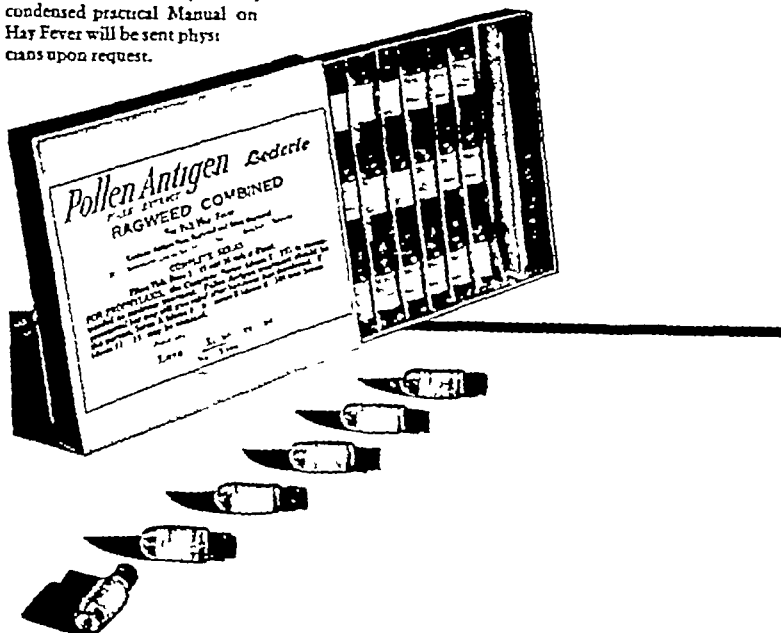
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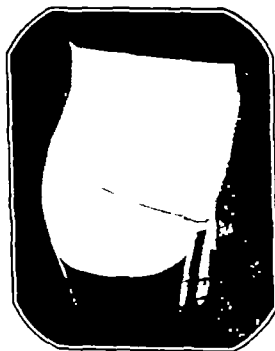
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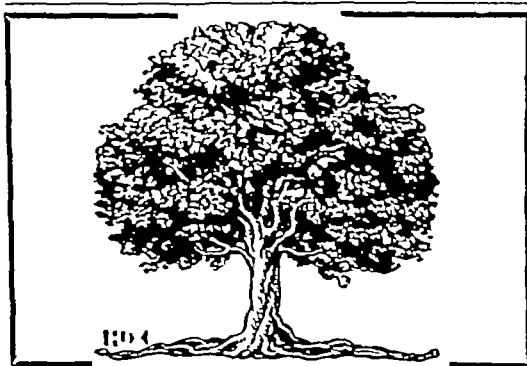
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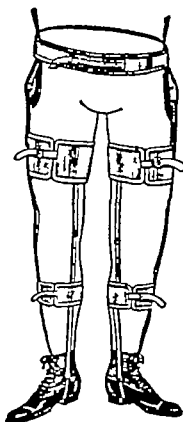
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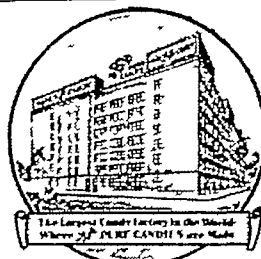
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However, it remained for modern biochemical science to establish the chemical identity of this antiscorbutic factor. Vitamin C is now known to be identical with cevitamic acid (levo ascorbic acid) and is as yet the only vitamin to be synthesized in the laboratory (3).

There would appear to be no valid reason why scurvy should ever constitute a serious threat to the health of the average American infant or adult. Development of

refrigerated transportation for raw foods and improvements in modern methods of food preservation, specifically canning methods, make available to the consumer during the entire year a large variety of foods possessed of valuable vitamin C contents. In addition the modern trend towards education of the layman in regard to the vitamin C requirements of both the infant and the adult should assist in complete eradication of infantile and adult scurvy from America.

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(1) Vitamins: A Survey of Present Knowledge. Page 167. Medical Research Council Special Report 167. 1932. His Majesty's Stationery Office, London.

(2) Vitamins in Theory and Practice, Page 84. L. J. Harris. 1935. Macmillan, New York.

(3) 1933 J. Chem. Soc. 124-1419.

(4) 1937 J. Home Econ. 40: 553.

(5) 1945 Amer. Jour. Pub. Health 35: 1840.

(6) 1933 Ind. Eng. Chem. 25: 682.

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In diarrhea, carbohydrates in the form of dextrin maltose, well cooked cereals or rice usually can be handled without trouble. —D B Jones A discussion of some of the common infantile diarrhea and the diets used in it.

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In cases of diarrhea. For the first day or so no sugar should be added to the milk. If the bowel movements improve carbohydrates may be added. This should be the one that is most easily assimilated so dextrin maltose is the carbohydrate of choice. —W H McCaslan. Summer diarrhea in infants and young children. Alabama J. 278 282

If there is an improvement in the carbohydrate may be added the teaching of the originator most easily assimilated. Dextrin maltose is therefore the carbohydrate of choice. —Summer diarrhea in the young. International J. 9 111 118

The condition in which dextrin maltose is particularly indicated is acute attacks of vomiting, diarrhea and fever. It seems to be more rapid and recurrence less likely to take place if dextrin maltose is substituted for milk sugar or cane sugar when these have been used, and the subsequent gain in weight is more rapid. In brief I think it safe to say that pediatricians are relying less implicitly on milk sugar but are inclined to split the sugar element giving cane sugar a place of value and dextrin maltose a decidedly prominent place, particularly in acute and difficult cases. —W J Hopkins. Present tendencies in infant feeding Indianapolis M J July 1914

Transition to a whole milk or one and one half to two ounces of whole milk to every pound of body weight is reached. This also amounts to five to seven per cent. —R A Strong. Summer diarrhea in infancy and early childhood. Arch. Pediat. 1923

SERIOUSNESS OF DIARRRHEA

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In the treatment of diarrhea, the sugar is added gradually as conditions admit some sugar other than milk sugar or cane sugar being used preferably dextrin and maltose. —H E Small. Diarrhoea in bottle fed infants. J. Maine M. A. 12 164 168 Jan 1922

"It should be remembered that a large percentage of sugar be required it is better to replace it by dextrin maltose, such as Mead's Nos 1 and 2 where the maltose is only slightly in excess of the dextrins, thus diminishing the possibility of excessive fermentation. —W J Pearson. Common practices in infant feeding Post-Graduate Med J 6 38 1930 abstr Brit J Child Dis 23 162-165, April June, 1931

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CLINICAL MANIFESTATIONS OF ALLERGY IN THE EYES

ARTHUR J BEDELL, M D, *Albany*

The subject of allergy is one of supreme practical importance to all ophthalmologists because of the frequency of ocular symptoms and the variety of tissue responses. It is an especially appropriate topic for consideration in New York City where the work of many pioneers has blazed an ever-lengthening trail toward the goal of complete understanding.

This communication will mention a few general principles, record some personal experiences, and serve as a starting point from which the discussers may expound their theories and report their practices.

By almost universal consent we consider allergy to be present when there is a family history of some type of hypersensitivity, when the signs and symptoms of the condition presented by the patient can be explained either by the spasm of a smooth muscle or an increased permeability of the capillaries, when there is an eosinophilia not explained by some other disease, and when some skin reactions are positive.

Allergins attack certain parts with greater frequency and intensity than others. These "shock tissues" are the skin, the conjunctiva, and retina. The iris, the lens, and the optic nerve are at times the site of extreme reactions so rapid in onset and so destructive to vision that they are well-classed as emergencies. Just what these reactions are, how they are incited and therapeutically alleviated has been of increasing interest to the patient and the physician. Frank focal infections, distinct constitutional invasions, and local infections are so intimately and inseparably interwoven with allergic symptoms that diagnostic acumen is needed to unravel the problem.

The skin of the eyelids and adjacent parts reacts to allergins the same as any other portion of the dermis. This is best displayed in the so-called angioneurotic edema where the lids become red and edematous with an intense itching. This has often been ascribed to a nerve explosion but more recent and more detailed investigations frequently reveal that exposure to cold or heat, the ingestion of certain foods, contact with face powders or the extension from the nose as in hay-fever, are among the many activating agents. The individual attacks are of short duration and subside so quickly that nothing remains to identify the upset. Urticaria of the lids and the itching and redness which follows the application of drugs, such as yellow oxide of mercury, are both evidence of allergy.

Conjunctival itching and lachrimation with photophobia has long been associated with the term hay-fever. The consideration of conjunctival allergy includes much more than a simple congestion with increased secretion. In follicular conjunctivitis large succulent follicles develop in the hypersensitive idiopathically, after the use of alkaloids such as atropine and eserine or by some as yet unrecognized cause. It is a well-known clinical fact that many patients develop an atropine folliculosis, and that after they have once had it, atropine cannot be used again without an immediate recurrence of the symptoms. Because of the extensive use of ethyl hydrocupreine, it is well to consider the occasional patient who has an intense inflammation after the use of a single drop of the one per cent solution.

For many years evidence has been accumulating which now warrants the ver-

dict that phlyctenular disease of the conjunctiva and cornea is allergic. This is further confirmed by the rapid disappearance of the intense photophobia and the complete recovery when the patient is placed in good hygienic surroundings. Vernal catarrh is without question of allergic origin whether the palpebral type with firm almost cartilaginous follicles or limbus elevations and corneal overgrowth, or a combination of these. The allergic dominance is proved by the eosinophiles found in the conjunctival smear, the seasonal variation, and the result of therapeutic measures.

It is probable that some cases of syphilitic and tuberculous interstitial keratitis may be inaugurated, or aggravated, by treatment directed toward the cure of the underlying constitutional malady. Bedside experience suggests an allergic effect when the patient who has been given injections of the heavy metals, particularly arsenic, develops a rapid infiltration of the cornea. The tuberculous form seems to be influenced by the overzealous use of tuberculin. There is much work to be done before a precise statement can be made that interstitial keratitis is definitely allergic. Episcleritis and scleritis may be allergic. The course of the disease certainly suggests an evanescent cause.

What we formerly called spongy iritis should in the light of our present knowledge be termed allergic iritis, for it seems to be an indication of an acute toxemia suggesting bacterial allergy. For instance, when an eye shows a definite but moderately severe ciliary injection, slightly discolored iris, sluggish pupillary response to light, a few cells in the aqueous and unimpaired vision, the diagnosis of iritis is established. If within a few hours the eyelids become red and edematous, the bulbar congestion extreme, the cornea cloudy, because of many criss-cross wrinkles in Descemet's membrane, the iris almost completely hidden behind a yellow exudate, which completely fills the anterior chamber, and the eye nearly blind, an allergic reaction is suggested. When after forty-eight hours of treatment the eye becomes almost white, the exudate practically absorbed and the vision markedly improved, the conclusion seems obvious.

J. W., male, aged thirty-two years, has had five attacks of iritis in the last twenty-three years. They all followed what he called a head cold, and have been associated with an exacerbation of urethritis. All have been rapid in onset, and have subsided quickly. The last two attacks only lasted ten days. The course was always the same, a sudden congestion of the eyeball, discoloration of the iris, and within a few hours the entire anterior chamber was filled with a yellowish exudate. Under atropine, hot compresses, and atophan the exudate speedily disappeared. His eye was white and free from evidence of inflammation within a few days.

The small whitish-gray nodules which form on the pupillary border of the iris may be an indication of tuberculous allergy.

There is an allergic form of cataract, but at the present time it is difficult or impossible to always distinguish it from other complicate types of lens opacity. Three forms are easily recognized, the one which develops in some diabetics, that which appears in some patients with goiter, and those which seem part of an atopic eczema.

Retinal allergy may become visible in one of two ways. *First*, an intense widespread edema causing a massive swelling often completely obscuring the retinal vessels. This follows an injection of serum in the sensitized patient, and is usually associated with a widespread urticarial eruption. *Second*, is the effect of increased permeability of the capillaries and results in many superficial and deep hemorrhages in the retina, suggesting thrombosis of the central retinal vein, or one of its major branches. The ophthalmoscopic picture varies from week to week. In some cases all of the blood disappears and sight is restored to normal. In others the retina in the macular region becomes disorganized and central vision is either reduced or destroyed. This was illustrated in my Chairman's Address at the 1935 meeting of the American Medical Association.

It seems probable that the so-called Eales' disease, or recurring retinal hemorrhages in the young adult, often said to be of tuberculous origin, is an expression of allergy. In many of these cases retinitis proliferans develops.

The synopsis of a case will illustrate the essentials of the history and record the progress of recurring retinal hemor-

rhages in a patient with healed tuberculosis and proved allergy

A twenty-three year old male was examined eight months after the vision of the right eye had started to fail and had been sightless for one month. The left eye had been blurred for one week. He had had hay-fever and asthma for many years and during much of the time had been taking a patent medicine cure containing cocaine. He had never had any bodily injury. His tonsils had been removed when he was a child and three suspicious teeth were extracted a month before he came to me. He was well-developed. His only complaints were failing vision and his intense discomfort during the asthmatic paroxysms.

The general physical examination showed no change in the heart. There was no gross physical changes in the lungs. The x-ray pictures gave evidence of an old widespread bronchial infection with no evidence of active tuberculosis with calcified nodes of the left hilum but no visible primary focus. His blood count was essentially negative. The coagulation time was four minutes, the bleeding time two minutes. Complete urinalysis negative. The Wassermann reaction, repeated many times, was negative. Manteaux test 4+.

Examination of the right eye. Vision L.P. The pupil was five mm regular and active. The lens was clear. The vitreous was densely opaque with red blood cells adherent to all of the massed fibrils. There was no fundus reflex or detail.

The vision of the left eye 20/50. The pupil was 3.5 mm regular and active. The media were clear, the disk was distinctly outlined with considerable edema of the nasal half. The retinal veins were full, slightly tortuous and in many places indented where they were crossed by the retinal arteries. The latter were little changed. From the macula and extending several disk diameters peripherally there were several retinal hemorrhages of the thick, dark red, nonstriate variety and a few small, deep retinal extravasations.

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When last seen the disk was dimly outlined through a thick retinitis proliferans membrane, which extended over much of the temporal half of the retina. Through a large oval opening in this sheet, the disorganized macular region was visible. In places the proliferation extended so far forward that it was best seen with a +14.00 lens.

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Some cases of retrobulbar neuritis are allergic. The sudden edema of the optic nerve can and probably does cause the syndrome to which that name is applied. An increased tissue sensitivity may be responsible in cases produced by alcohol, tobacco, arsphenamine, tryparsamide, quinine, carbon disulphide, and many other chemicals. In the retrobulbar neuritis of unknown origin it may be that the tissue reaction results from bacterial or protein allergy.

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It is probable that some cases of syphilitic and tuberculous interstitial keratitis may be inaugurated, or aggravated, by treatment directed toward the cure of the underlying constitutional malady. Bedside experience suggests an allergic effect when the patient who has been given injections of the heavy metals, particularly arsenic, develops a rapid infiltration of the cornea. The tuberculous form seems to be influenced by the overzealous use of tuberculin. There is much work to be done before a precise statement can be made that interstitial keratitis is definitely allergic. Episcleritis and scleritis may be allergic. The course of the disease certainly suggests an evanescent cause.

What we formerly called spongy iritis should in the light of our present knowledge be termed allergic iritis, for it seems to be an indication of an acute toxemia suggesting bacterial allergy. For instance, when an eye shows a definite but moderately severe ciliary injection, slightly discolored iris, sluggish pupillary response to light, a few cells in the aqueous and unimpaired vision, the diagnosis of iritis is established. If within a few hours the eyelids become red and edematous, the bulbar congestion extreme, the cornea cloudy, because of many criss-cross wrinkles in Descemet's membrane, the iris almost completely hidden behind a yellow exudate, which completely fills the anterior chamber, and the eye nearly blind, an allergic reaction is suggested. When after forty-eight hours of treatment the eye becomes almost white, the exudate practically absorbed and the vision markedly improved, the conclusion seems obvious.

J W, male, aged thirty-two years, has had five attacks of iritis in the last twenty-three years. They all followed what he called a head cold, and have been associated with an exacerbation of urethritis. All have been rapid in onset, and have subsided quickly. The last two attacks only lasted ten days. The course was always the same, a sudden congestion of the eyeball, discoloration of the iris, and within a few hours the entire anterior chamber was filled with a yellowish exudate. Under atropine, hot compresses, and atophan the exudate speedily disappeared. His eye was white and free from evidence of inflammation within a few days.

The small whitish-gray nodules which form on the pupillary border of the iris may be an indication of tuberculous allergy.

There is an allergic form of cataract, but at the present time it is difficult or impossible to always distinguish it from other complicate types of lens opacity. Three forms are easily recognized, the one which develops in some diabetics, that which appears in some patients with goiter, and those which seem part of an atopic eczema.

Retinal allergy may become visible in one of two ways. *First*, an intense widespread edema causing a massive swelling often completely obscuring the retinal vessels. This follows an injection of serum in the sensitized patient, and is usually associated with a widespread urticarial eruption. *Second*, is the effect of increased permeability of the capillaries and results in many superficial and deep hemorrhages in the retina, suggesting thrombosis of the central retinal vein, or one of its major branches. The ophthalmoscopic picture varies from week to week. In some cases all of the blood disappears and sight is restored to normal. In others the retina in the macular region becomes disorganized and central vision is either reduced or destroyed. This was illustrated in my Chairman's Address at the 1935 meeting of the American Medical Association.

It seems probable that the so-called Eales' disease, or recurring retinal hemorrhages in the young adult, often said to be of tuberculous origin, is an expression of allergy. In many of these cases retinitis proliferans develops.

The synopsis of a case will illustrate the essentials of the history and record the progress of recurring retinal hemor-

rhages in a patient with healed tuberculosis and proved allergy

A twenty-three year old male was examined eight months after the vision of the right eye had started to fail and had been sightless for one month. The left eye had been blurred for one week. He had had hay-fever and asthma for many years and during much of the time had been taking a patent medicine cure containing cocaine. He had never had any bodily injury. His tonsils had been removed when he was a child and three suspicious teeth were extracted a month before he came to me. He was well-developed. His only complaints were failing vision and his intense discomfort during the asthmatic paroxysms.

The general physical examination showed no change in the heart. There was no gross physical changes in the lungs. The x-ray pictures gave evidence of an old widespread bronchial infection with no evidence of active tuberculosis with calcified nodes of the left hilum but no visible primary focus. His blood count was essentially negative. The coagulation time was four minutes, the bleeding time two minutes. Complete urinalysis negative. The Wassermann reaction, repeated many times, was negative. Manteaux test 4+

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attack is one of an indescribable mental haze and blurred vision followed by brilliant sawtooth areas of scintillating, waving lights with partial obscuration of the visual field, a blind spot, an intense unilateral headache, either on the side where the eye symptoms are present or the other, sometimes accompanied by nausea, vomiting, and dizziness. The spell lasts from a few minutes to hours and evinces no particular regularity of recurrence.

Ophthalmologists have noted the symptomatic relief which has followed the use of correct glasses, the regulation of diet and of elimination, the change in home surroundings, the discontinuance of alcohol, tobacco, candy, especially chocolate, and many other things. As a result of the active interest of many internists and neurologists, it is now linked with allergy. This extremely annoying disease is not only disconcerting but often distressing and occasionally alarming so that if we can emerge from the darkness of the unknown and pass through the shadows of hope where we now stand, we may

eventually dwell in the sunshine of complete mastery and eradication of this prevalent disorder.

Conclusions

Any part of the eye may be the site of an allergic reaction. A complete history is essential to the correct evaluation of ocular signs and symptoms. Treatment of the eye should follow recognized methods. Dependence must be placed on adrenalin locally, the 1-100 solution is of decided value. Patients can be given hypodermic injections of adrenalin, or it can be administered by mouth. Too strenuous or too prolonged internal medication is dangerous. When a constitutional disease is present in an allergic patient, the greatest care is necessary in the conduct of treatment.

The old field of allergy has been re-plowed, the seeds of greater knowledge have been sown, and the harvest of earlier and more enduring cures depends upon the thoroughness of cultivation.

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Discussion

DR. CONRAD BERENS, *New York City*
Dr. Bedell with characteristic thoroughness has presented the subject of allergy in relation to ophthalmology and has given us much to weigh and consider. I know of no more important or timely problem because a history of hypersensitiveness to one or more allergins can be obtained in from five to fifteen per cent of our patients. Ten to fifteen per cent of patients who consult a rhinologist are allergic and this condition must be considered in their treatment. Although allergy is less strikingly drawn to the attention of ophthalmologists, allergy must be considered in the treatment of many eye lesions.

It is evident that positive reactions to skin tests do not necessarily indicate that this particular bacterium, food or other allergin is harmful to the patient, nor that the administration of the antigen will effect a cure. An example of this is the marked hypersensitiveness we have so often found to colon bacilli. Just as the histologic study of intradermal tests with uveal pigment may aid in more accurate diagnosis, so in the food allergies the leukopenic index of Vaughan may be of real value. When patients are allergic to foods they develop leukopenia instead of leukocytosis following the ingestion of the food to which they are hypersensitive.

The value of eosinophiles in diagnosis has been broached. The positive chemotaxis of allergy often results in the presence of eosinophiles in conjunctival and other secretions, they seem to have some diagnostic value, especially in hay-fever conjunctivitis and vernal catarrh.

I agree with Dr. Bedell that focal infections and allergy are inseparable. In fact all of our allergic patients are toxic and I am inclined to the belief that this is more often bacterial than chemical. It is our practice to treat allergic eye lesions apparently associated with hyperplastic nasal membranes first from the allergic standpoint and to resort to surgery only for purposes of drainage. We often use autogenous bacterial antigens selected by serobacteriologic tests,¹ by animal inoculation,² and by intracutaneous tests. Desensitizing injections are administered intravenously and immunizing injections intracutaneously and subcutaneously, but naturally this is only a small part of the treatment of any allergy.

The relation of focal infection and allergy from other causes—for example, pollen—is well-established and some immunologists use both bacterial and pollen antigens in treatment. I have seen two especially striking examples of drug idiosyncrasy in relation to focal infection. These two patients had atropine blepharoconjunctivitis

and were also allergic to all other cycloplegics. Both patients became desensitized to all these drugs following operations on their ethmoid sinuses. One of these patients was also hypersensitive to tuberculin and to uveal pigment but his severe iridocyclitis did not improve with injections of uveal pigment, tuberculin or autogenous vaccines but his eye quieted promptly when his ethmoid sinuses were drained. Apparently, adrenal secretions bear much of the brunt of some bacterial and chemical toxic processes.

I have not seen cases of allergy due to ethyl hydrocupreine but allergic blepharoconjunctivitis occurred in three patients from the use of butyn which was not supposed to be an allergin.

In four patients with so-called vernal catarrh with flat papules, who were tested for foods, pollens, and danders the results were negative. Two were treated with atenil injections with objective improvement in one case and temporary improvement in the other, the other two cases were treated locally with collorium with no improvement. Two patients were cured, one for eight years and one for four years, after receiving radium treatment but the second patient a boy of eighteen, developed bilateral cataracts. This latter patient was hypersensitive to a streptococcus recovered from his nasopharynx but although his postnasal discharge seemed to be lessened by nasal treatment and autogenous vaccine treatment his eyes showed little if any improvement until radium was applied.

Concerning iritis, I agree with Dr. Bedell that in many cases it is probably an indication of toxemia suggesting bacterial allergy. Our chronic cases of iritis may be the result of sensitization to bacterial products and not the presence of bacteria. However, we have produced acute iritis² in rabbits injected in-

travenously with crude and purified cultures of various organisms from twenty-one patients with eye lesions and from fourteen patients without eye lesions (Table I) without previous sensitization of the eyes. It is of interest that almost as large a percentage of cultures from the control cases produced iritis as the cultures from the patients with eye lesions. Also the organisms which we consider toxic from *in vitro* tests³ produced iritis only in a slightly greater proportion of cases than the organisms which were probably less toxic. The other point of interest is the large number of organisms which produced iritis in rabbits (1 c, streptococci, staphylococci, colon bacilli, non-lactose fermenter, enterococci, G tetragenae pneumococci, Friedländer bacilli, and mixed primary cultures).

It is possible that in some cases food or animal emanation allergy may be a factor, but I believe that in the chronic recurrent cases we must think of the possibility of bacterial allergy because many of our patients were hypersensitive to intradermal tests with their own bacteria and some of them apparently were benefited by autogenous vaccines. Experiments which suggest the possibility of this relationship have been reported by Brown⁴ who implanted foci of infection in parts remote from the eye, and ocular inflammation developed in one animal in eighty. When the eye was sensitized by a toxic filtrate of the organism the remote foci activated the eye in twenty-five of thirty instances. The same organisms injected intravenously after such sensitization activated it in ninety-eight of one hundred instances.

From our studies of infection it is probable that chronic uveitis also may be of allergic origin and that edema (due to allergy) affecting the optic nerve may be responsible for many fleeting symptoms seen in so-called retrobulbar neuritis.

TABLE I.—RESULTS OF INTRAVENOUS INJECTIONS OF CRUDE AND PURIFIED CULTURES OF VARIOUS ORGANISMS FROM 21 PATIENTS WITH EYE LESIONS AND FROM 14 PATIENTS WITHOUT EYE LESIONS

Type of culture	Eye Lesions Subjects (21)			Control Cases (14)		
	Number tested	Per cent positive	Per cent undetermined*	Number tested	Per cent positive	Per cent undetermined*
Primary (mixed)	51	25.5	39	35	26	60
Streptococci	61	44	0	69	29	3
Staphylococci	6	17	50	8	37.5	12.5
Colon bacilli	4	75	25	1	100	0
Non lact fermenter	3	67	0	1	0	100
Enterococci	7	28.5	0	0	0	0
G tetragenae	1	0	0	0	0	0
Pneumococci	1	0	0	1	0	100
Friedländer bacilli	0			1	100	0
Total	134	36	17.9	116	29.2	21.5

* Died without Examination

Doctor Bedell speaks of a possible allergic form of cataract, this problem was considered by Römer in 1908 and by A. E. Davis in 1922. My experience seems to indicate that patients may become hypersensitive to their own lens antigen, and I believe in endophthalmitis phaco-allergica in spite of Roth's⁶ negative evidence. Desensitization before operation and during the period of recovery seems to be of some benefit (Table II). I thought that a congenital nuclear cataract which occurred in one of my patients might have been a manifestation of allergy, as this patient was extremely allergic to milk. Likewise, he is the only patient who was markedly hypersensitive to lens antigen, who had not had one eye operated upon for cataract or been exposed to the absorption of lens material.

Tests with lens antigen were made on 103 patients. Of the thirty-nine patients with positive reactions (Table II), three were negative when tested a second time and one of these patients had a doubtful reaction before a negative reaction was obtained.

TABLE II—RESULTS OF LENS PROTEIN TESTS IN 103 PATIENTS WITH CATARACT

Results	Number of patients	Number of tests
Negative reactions	51	53
Doubtful reactions	13	17
Positive reactions	39	48
Totals	103	118

TABLE III—RESULTS OF UVEAL PIGMENT TESTS

Diagnosis	Pos	Neg	Doubt
Uveitis due to constitutional causes	6	16	5
Contusions with traumatic uveitis			
No sympathetic disturbance		3	
With sympathetic disturbance			1
Endophthalmitis phaco-anaphylactica (One eye lost after lens extraction)			1
Penetrating wounds involving uveal tract			
Recovery without enucleation, no sympathetic ophthalmitis		16	1
Enucleation of injured eye no sympathetic ophthalmitis		3	1
Sympathetic Ophthalmitis			
Foreign body not verified pathologically		1	
Penetrating wound not verified pathologically		1	
Postoperative case, enucleation cultures negative, pathologic report sympathetic ophthalmitis		1	
Buphthalmos			1
Optic atrophy		1	
Cataract	2	14	4
Keratitis	1	1	
Normal eyes		2	
Total of all cases subdivided	9	59	14
Total number of cases		82	

Parke-Davis pigment used in 33 cases, Burky pigment in 49 cases.

Two other patients originally had negative reactions but became positive. Another patient originally had a doubtful reaction, then became negative and finally gave a positive reaction. Two patients, who were positive, gave doubtful reactions when a second test was performed.

Thirty operations were performed on this group of patients with positive reactions and complications occurred in eight cases, but in no case that was desensitized before operation was the eye lost from chronic inflammation. However, two hypersensitive patients lost their eyes from chronic inflammation. The allergy to lens antigen in these two cases was not discovered until after the cataract had been extracted.

Doctor Bedell's statement that Eales' disease is an expression of allergy is of great interest. A patient seen by me with recurring hemorrhages, responded slowly (if at all) to treatment which consisted of the removal of foci of infection, and the administration of an autogenous vaccine consisting of *Streptococcus viridans* (throat), nonhemolytic streptococci (throat), *Staphylococcus aureus* (throat) and nonhemolytic enterococci (postnasal). Dr. Blake, who referred this patient to me, stated that he improved more rapidly with moccasin snake venom.

I am inclined to believe that hypersensitivity to uveal pigment plays some part in the development of sympathetic ophthalmitis. Whether this is a primary or secondary part I do not know. My impression is that a more important factor is the sensitization of the patient to toxins from his own bacteria and that this is more likely to be the exciting factor which produces the more serious part of the disease. The organ specific hypersensitivity to uveal pigment which is set up may be a factor in preparing the fellow eye for the possible elective effect of the toxins from other foci of infection. In the few cases I have seen, which were supposed to have sympathetic ophthalmitis, there has always been the association of definite disease in the nasal accessory sinuses, and apparently the best results, that I have seen from any treatment, occurred when the sinuses could be properly cared for. Intradermal tests on eighty-two patients with inflammatory eye diseases are tabulated in Table III. Nine of the tests were positive, fifty-nine were negative, and fourteen were doubtful. Six with positive tests were patients with chronic uveitis, probably from a constitutional cause and without definite evidence of sympathetic ophthalmitis. Two of the patients had cataract and one of them had keratitis. Only three patients had a condition which was diagnosed clinically as

sympathetic ophthalmitis and only one was verified histologically. The pigment tests were negative in all three.

Recently we have followed Friedenwald's⁴ suggestion of excising the skin on the fourteenth day following injection of uveal pigment. This is apparently an excellent method

round cells are filled with pigment granules but much of the pigment is still unphagocytosed. This is a case of recurrent chronic uveitis but clinically showing no characteristic signs of sympathetic ophthalmitis. In Fig 3 (expulsive postoperative hemorrhage with incarceration of uveal tissue in the



Fig 1 A positive intradermal reaction to uveal pigment. The large epithelioid cell nodule is shown with scattered masses of phagocytosed pigment.



Fig 2 A negative intradermal reaction to uveal pigment. The large round cells are filled with pigment granules but much of the pigment is still unphagocytosed.

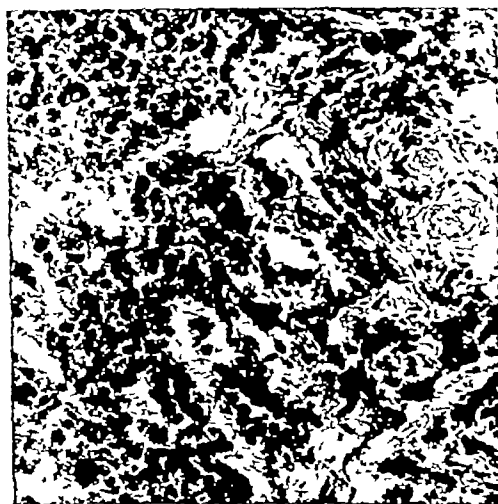


Fig 3 An accidental infection with abscess formation. Therefore, a diagnosis could not be made.

of differentiating a positive from a negative reaction as may be seen by referring to Figures 1, 2, 3. In Fig 1, the positive intradermal reaction, the large epithelioid cell nodule is shown with scattered masses of phagocytosed pigment. This skin lesion closely resembles the histologic appearance of the eye lesions seen in sympathetic ophthalmitis, but the eye disease, although a chronic uveitis, had none of the characteristics of sympathetic ophthalmitis and the other eye was not even irritated. In Fig 2, the negative intradermal test, the large

wound) an accidental infection with abscess formation occurred and therefore a diagnosis could not be made. This reaction clinically might have been considered positive and demonstrates the importance of examining the excised tissue histologically.

All cases of migraine merit careful allergic study, especially for possible allergy to foods and bacteria, and some of our patients seem to have been benefited by autogenous bacterial antigens combined with general treatment suggested by serobacteriologic and other tests.

In regard to treatment, gradual desensitization seems to be of little value in allergy to foods, and we attempt to eliminate the allergin. In bacterial allergy, removal of the infection seems to be most effective in relieving symptoms, drug, food, and pollen allergies sometimes are strikingly improved by this treatment alone or in combination with the use of autogenous vaccines and desensitization with specific antigens. We have much to learn in regard to the treatment of allergy and the question of excess alkaline reserve, and the recent work of Wilmer and his associates⁷ showing that carbohydrate tolerance and metabolism are altered in the allergic state, may aid in treatment. Garretson⁸ goes so far as to state that "with normal adrenalin content in the blood stream, allergic symptoms cannot

occur." The use of adrenalin and thyroid preparations have an important place in the treatment of allergy.

Doctor Bedell has not only made a valuable contribution to this perplexing problem but has made many important suggestions in regard to diagnosis and treatment which I am sure will benefit our patients.

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HOSPITAL PLIGHT BLAMED ON UNCLE SAM

Strong censure of the Federal Government for its hospital policy was voiced at the American Surgeons' Convention in Buffalo by Mr Robert Jolly, of Houston, Texas past president of the American Hospital Association.

"The government is giving money for hogs, for sick ducks, for digging up cotton, for almost anything but hospitals," Mr Jolly asserted. The Houston superintendent referred particularly to "voluntary" hospitals, which are the general type of non-profit institutions.

"In the last five years," he declared, "452 hospitals closed because they couldn't pay their way."

"By government imposition," he explained, "I mean this. The federal government feeds, clothes and shelters a man when he is well. When he becomes sick, it says, 'Let the voluntary hospitals take care of him.' The government has dropped that load in the lap of the hospitals."

"If it is the government's business to take

care of a man when he's well, it is more of its business to take care of him when he's sick."

"The government has not only imposed, it has entered into competition with the voluntary hospitals. It has no more right to do this than it has to compete against any business."

"It has been putting millions of dollars into veterans' hospitals. I have no quarrel with government hospitalization for veterans with war disabilities. But, instead of spending millions on new hospitals for veterans, why not put these men in hospitals in their own communities and pay these hospitals? The men would get better and less expensive care."

"This would be the salvation of many American hospitals."

"Politics has come in, too, so that other people—besides veterans—who have no business to get treatment in the veterans' hospitals, are being treated in them. The taxpayers have to pay for it."

OUR PRICELESS NEWSPAPER HEADLINES

The delightful manner in which some New York newspapers report scientific addresses was well illustrated a few days ago. "Hey, Portsider, Doc Says You're Not Nuts at All," was a headline in one paper, while another blared "Southpaws Not Crazy—Just Natural, Says Medic." All this hullabaloo was to hail the statement that the widespread belief that the lefthanded person is always slightly abnormal probably has no good reason behind it, as the New York Academy of Medicine was informed by Dr Samuel T. Orton, professor of neu-

rology and neuropathology of the College of Physicians and Surgeons, Columbia University, in delivering the first of the 1936 Thomas William Salmon Memorial lectures.

The prejudice, he remarked, is reflected in the accessory meanings which have attached to the Latin word "sinister" and the French word "gauche." Yet, in his investigations, Dr Orton said he had found it "more than probable that a good lefthanded person will be superior to an indifferent righthander."

SYMPATHETIC NERVOUS SYSTEM IN ITS RELATION TO PERIPHERAL VASCULAR DISEASE

EARLE E. MACK, MD F A C P *Syracuse*

The study and treatment of the symptoms and pathological states produced by changes, either functional or organic, in the arterial system require a well-established conception of the physiological mechanism governing them.

It will be recalled that Cunningham,¹ wrote as follows:

The sympathetic nervous system comprises a pair of elongated gangliated trunks, extending through the whole length of the body from the base of the skull to the coccyx, connected to the peripheral spinal nerves by one series of nerves, and to the viscera by another series.

At its cephalic end each sympathetic trunk passes into the cranial cavity along the internal carotid artery, on which it forms plexuses, and thereby forms complex relations with certain cerebral nerves. At their caudal ends the two sympathetic trunks are joined together by fine filaments and unite with the coccygeal ganglion.

The sympathetic system is necessarily dependent on and subservient to the spinal nervous system. It distributes efferent fibers from the peripheral spinal nerves to (a) the viscera and vessels of the splanchnic area and (b) through recurrent (gray) rami to vessels, glands and involuntary muscles in the course of the somatic divisions of the spinal nerves. It further collects and transmits to the cerebrospinal system afferent fibers from the viscera.

Ganglia situated in the thoracic and abdominal portions of the chain have to do chiefly with peripheral vasoconstriction, whereas those in the cervical region influence principally the viscera situated above the diaphragm.

In the abdominal viscera² the sympathetic acts as an antagonist to the vagus in that it effects vasoconstriction in the vessels of the abdominal organs and intestines, and inhibits smooth muscle constriction in the stomach, intestine, and biliary passages. It does, however, accelerate the transformation of glycogen into glucose, and stimulates the production of epinephrin.

The fibers innervating the abdominal viscera originate as the splanchnic nerves from the cord and paravertebral ganglia

at the level of the sixth to the ninth thoracic segments. Passing to the large celiac ganglion situated beneath the stomach and in front of the aorta, they are met with vagal fibers and, from this point on, the two may be anatomically indistinguishable.

The so-called "parasympathetic system" opposes in a general way the sympathetic, and its fibers course in the oculomotor, chorda tympani, vagus and pelvic nerves, and have their origin in the central nervous system. Alteration in the tonus between the two systems determines the regulation of the pupil, the cardiac activity, functional changes in the bladder and glands, and finally the vascular diameter.

Domination of the parasympathetic system has given rise to the term "vagatonia", while the term "sympathetico-tonus" has been used to describe the signs and symptoms produced by predominance of the sympathetic. Lastly it should be recalled that both systems carry not only conduction paths to the various viscera and vessels, but also afferent fibers which convey sensory impulses from the intestinal organs.

In summarizing we have to consider therefore, the existence and physiological activities of two antagonistic sets of fibers: *first*, the vasoconstrictors whose action causes a constriction of the muscular coats of the arteries and therefore a diminution in the size of the vessels, *second*, the vasodilator fibers whose action causes an increase in size of the blood vessels, due probably to a relaxation or inhibition of the muscular coats of the arteries.³

Abnormal changes in the normal physiological behavior of this coordinated control may result in the production of certain definitely demonstrable clinical syndromes, of which Raynaud's disease and scleroderma are outstanding examples.

While both of these diseases are usually described under Diseases of the Nervous System in most textbooks, it has

been suggested by Graham of Toronto⁴ that a keener interest might be stimulated if the author would direct attention to the vascular origins of the same, rather than to classify them as Vasomotor and Trophic Neuroses of the nervous system. He directs attention to the fact that sclerotic vascular changes are responsible not only for the obliterative vascular disturbances in diabetes, but are the primary cause of peripheral neuritis, if present, as described by Woltman and Wilder.⁵ He feels that this is an adequate justification for a more conscious recognition of the vascular origin of nutritional disturbances and of many symptoms occurring in the extremities in certain diseases primarily affecting the nervous system.

While Raynaud's is a disease with which we are all familiar, the relative infrequency of its occurrence justifies a brief review of the signs and symptoms which must be present in order to fulfil the criteria set down by Raynaud in his original description of the disease in 1862. These are

1 Intermittent attacks of changes in color of the acral parts

2 Symmetrical (or bilateral) involvement.

3 Absence of clinical evidence of occlusive lesions of the peripheral arteries

4 Gangrene or trophic changes (if present) limited principally to the skin

To these, Allen and Brown⁶ have suggested the addition of the following

5 The disease must have been present for at least two years

6 There must be no evidence of disease to which it could be secondary

The infrequency with which the disease is met is attested by the fact that only nineteen cases were observed in some twenty thousand medical patients admitted to Johns Hopkins Hospital,⁷ and that the diagnosis was made in only two hundred and sixty-five cases over a period of eleven years at the Mayo Clinic.⁸ Out of this number sixty-one cases were excluded because of atypical symptoms, making the total for the period only two hundred and four.

It has been said that neurotic and hysterical patients are more likely to develop the disease, which fact would seem to serve as a partially satisfactory explanation for its prevalence in the female, in

which sex the psychoneurotic factor is more frequently observed. Of the 204 cases studied at the Mayo Clinic by Allen and Brown,⁸ eighty-nine per cent occurred in females, and it is of interest that they did not find that menstrual disorders played a part in the pathogenesis.

Symptoms. According to Osler⁷ mild forms have been described, and in such cases the disease may never progress beyond the stage commonly described as chilblains. In cold weather the patient easily develops acrocyanosis which is followed by warmth and redness, and may be accompanied by swelling, throbbing, and aching. Such a condition may obtain for years, never advancing to the state of necrosis.

The author describes moderately severe cases in which the fingers are painful, the patient complaining of numbness and tingling, the parts are seen to be white and cold, and within a short period of time change to the opposite extreme, becoming reddened and hot. Within a day or two the fingers may be seen to remain permanently blue as far proximally as the second joint, and the pain increases in severity. The tip of one finger or the terminal joint of another may become darker, and a few blebs may be observed, but in the interim the other digits begin to show signs of restoration of function.

Necrosis having occurred in the regions mentioned, the parts gradually separate, and the patient may recover without another attack, or recurrence may take place in the ensuing year or two.

The severe form may affect both the upper and lower extremities at the same time, as well as the tip of the nose and ears, and is accompanied by severe pain. This attack may persist for several months, giving rise in rare instances to loss of both hands and feet eventually.⁷

In the series of 204 cases reported from the Mayo Clinic, the grouping was as follows. One hundred and forty-seven cases were uncomplicated, fifty-one cases were accompanied by scleroderma or arthritis, and six cases presented trophic changes or recurrent infection.

The close relation of Raynaud's to scleroderma merits consideration. Scleroderma is characterized chiefly by induration, pigmentation, and sclerosis of the skin, often accompanied by loss of weight,

asthenia, arthritis, and muscular atrophy.⁸ The first case of this disease was reported by Watson in 1754. It may involve the body in a diffuse manner, or it may be localized, in which instance it is often designated as "morphæa."

Pathological examination reveals a hypertrophy of the collagen, there is an absence of blood vessels and skin glands in the affected area, the lymph spaces are dilated, and hyperpigmentation of the rete and corium is observed. The affected part feels dry and rough and is dull and parchment-like in appearance, sometimes however having a faint silvery sheen. Extensive involvement may lead to serious limitation of motion of the affected part, particularly the face and fingers.

While the etiology is unknown, as in Raynaud's, several possible causes have been suggested, such as infection, arsenism, trauma, and glandular dysfunction, particular emphasis being placed upon the thyroid.

There has been devised by Brown,⁸ an ingenious method of determining quantitatively the amount of vasospasm in an extremity when this condition is present. He has described what he terms the "Vasomotor Index" which indicates the increase in surface temperature of the foot or hand for each degree of temperature of the body. The test is carried out as follows:

Patient is given typhoid vaccine intravenously, the surface temperature of the hands and feet are estimated by means of the thermocouple, and simultaneously the temperature of the mouth is recorded. After the chill, rise in mouth temperature is accompanied by a relaxation of the surface vessels and rapid increase in temperature of the skin. The difference between the maximal rise in the surface temperature and the maximal increase in the mouth temperature constitutes the rise in surface temperature due largely to vasomotor effects. This value divided by the number of degrees rise in mouth temperature gives a value which represents the increase (in degrees) in the surface temperature for each degree of increase in temperature of the body.

In normals under controlled conditions the average surface temperature ranges between 32 and 35° C. In individuals with warm hands and feet, low indices are naturally obtained, whereas in vaso-

motor disturbances of the spastic type such as Raynaud's, indices of ten or more are frequently seen, while in scleroderma the average is about 6.5. The explanation for the difference in the two diseases lies in the fact that the reduction in circulation in Raynaud's is due perhaps exclusively to vasospasm, whereas in scleroderma, the investigators quoted believe there is added factor of occlusive disease of the smaller arterioles.

Symptoms. The disease may have a rapid or insidious onset, in which latter case considerable progression may occur for some time without exciting the attention of the patient.

Neuralgic and joint symptoms have been described, but these are probably not common. However, in some of the cases extensive shrinking and atrophy of the joints of the extremities may result in ankylosis with bending and fixation, especially of the fingers resulting in the condition known as sclerodactylia, and giving rise sometimes to ulcerations over the joints.⁹ Pigmentation of affected areas may cause confusion with Addison's disease and cases have been reported in which the two conditions have co-existed.

Prognosis. In the diffuse type accompanied by marked incapacitation, a fatal issue may be expected due to the likelihood of intercurrent infection from the sedentary state produced. In such cases serious interference with the processes of mastication and respiration will be found.

With the circumscribed form or morphæa the outlook is much more favorable and while the onset may be fairly rapid and may involve various portions of the body within a relatively short time, the progression may cease at any time and indeed, cases have been reported in which recovery has occurred in an apparently spontaneous manner.

Treatment of Vasospastic Conditions

While the two diseases described have been recognized as clinical entities for many years, very little information has been added to our knowledge of the etiological factors, so that therapeutic measures have been and still are merely symptomatic or palliative.

In 1925 Adson and Brown¹⁰ reported on the treatment of Raynaud's disease by lumbar ramisection and ganglionec-

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Allen and Brown state that Roentgen therapy applied to the autonomic system has, in their experience, been of only slight value, making this type of treatment questionable.

Injunctions of histamine¹⁶ in the form of a jelly have been used locally for the production of vasodilator effects, and in June 1934 Chanson and Eastwood¹⁷ reported encouraging results from the subcutaneous use of histamine acid phosphate in a series of seventy cases of rheumatism and allied disorders. Credit for the introduction of the drug into therapy is given to Deutsch¹⁸ who employed the method of iontophoresis, or local introduction of the substance by means of the galvanic current.

J Kovacs¹⁹ employing this technic, otherwise known as medical ionization, has recently reported on the use of a compound of cholin in the treatment of chronic arthritis and peripheral vascular disease. Cholin is a constituent of animal tissues and resembles muscarine in its action—it relieves vascular spasm and increases peripheral circulation. The compound used in this work was acetyl beta methylcholin chlorid, and Kovacs concludes that this local treatment appears to be of value in chronic arthritis, especially the rheumatoid type, and that it may also be of value for patients with peripheral vascular disease in which spasm is an important factor. He also maintains that the local introduction of this substance with the help of the galvanic current produces a pronounced and prolonged local effect which cannot be obtained through subcutaneous or oral administration.

Among the diseases of the blood vessels in which organic changes are demonstrable, let us consider Buerger's or thromboangitis obliterans, and the obliterating endarteritis of the arteriosclerotic. Confusion frequently arises in the differentiation of these two clinical entities, many observers basing their diagnosis upon the tendency of the former to follow definite racial trends, yet the dissimilarity between the two is very striking if one remembers certain basic principles.

While it is an interesting and curious fact that Buerger's has a special predilection for Polish and Russian Jews, the disease is by no means limited to these

people, therefore the racial factor should serve merely as an aid to diagnosis rather than a positive sign.

Buerger's is a disease of comparatively young adult life, occurring for the most part in male adults between the ages of twenty and forty, in which there may be little or no evidence of atheromatous change, giving rise oftentimes to the term of "juvenile or presenile gangrene." In the vast majority of cases, the involvement is limited to the lower extremities, usually in a bilateral respect. Hypertension is most likely to be absent, history of excessive use of tobacco, usually in the form of cigarettes, is an additional sign of value.

The patient with endarteritis obliterans usually is in the advanced age group, has visible or palpable evidence of atheromatous vascular change, and frequently involvement of but one extremity, in which the gangrenous process develops with greater speed than in Buerger's.

While the full description of the disease as given by Buerger is classical, it might be well to summarize the chief signs and symptoms as described by him.¹³ Pain in the affected limb or limbs, usually the lower extremity. The characteristic symptoms of intermittent claudication. Absent pulse in the artery of one or the other foot.

Early in the disease errors in diagnosis may occur, the condition being diagnosed as gout, myalgia, "rheumatism", fibrositis, and pes planus.

As is well-known, the pathological changes are chronic thrombosis affecting the main peripheral arteries and veins, resulting eventually in organization with canalization.

While it is logical to expect that therapy directed towards the relief of diminished vascular supply due to sclerotic changes in the vessels of the elderly patient would be of little avail, there is, however, evidence to indicate that the progress in Buerger's may be influenced by certain therapeutic procedures. Hot applications, elevation of the extremities, Buerger exercises, protein shock, suction, electrotherapy, and the intravenous injection of hypertonic saline solution have been recommended, but none of these measures have specific value.

In 1932 Adson and Brown¹⁴ reported results in one hundred bilateral sympha-

tomy, and perivascular sympathetic neurectomy of the common iliacs, and in an article published in 1930,¹¹ described the surgical treatment of sixteen cases of vasospastic types of scleroderma by resection of the sympathetic ganglia and trunks

Attention was called to the fact that permanent vasodilator effects follow resection of sympathetic ganglia and trunks, hence the application of this principle may be applied to any disease in which, either directly or indirectly, impairment of the circulation exists. They further stressed the fact that the results obtained in any case in which the vasoconstrictor fibers are divided must depend largely upon the ability of the vessels to dilate, and indicated clearly that arteries or arterioles with degenerative or occlusive changes present might be expected to be influenced but little by such a procedure.

In their studies the sixteen patients treated were divided into three arbitrary groups, the basis of classification being made on the relationship of the vasospastic phenomena to the development of the disease. The grouping was as follows:

- 1 Primary scleroderma with vasomotor disturbance appearing late in the disease
- 2 Scleroderma and vasomotor changes appearing simultaneously
- 3 Vasomotor changes preceding the development of scleroderma

In all of these patients, bilateral cervicothoracic resection of ganglia and trunks was done through the posterior route, and three patients were additionally operated through the abdominal approach for resection of the lumbar ganglia and sympathetics.

In the group classified as primary scleroderma with delayed vasomotor changes, the three cases observed presented definite changes, namely:

- 1 Symptoms of vasomotor reflex disappeared
- 2 The skin became warmer, softer, and more flexible
- 3 Pigmentation diminished
- 4 Joint mobility increased
- 5 Muscular function developed
- 6 Trophic ulcers healed.
- 7 New activity appeared in the growth of the hair and nails

In the second group in which both scleroderma and vasomotor changes appeared simultaneously, four cases were

studied, and about twenty per cent improvement was noted.

In the third and last group consisting of eight cases, the percentage improvement varied from thirty to sixty per cent within the period of observation. Improvement of a striking character in cases with involvement of the feet seemed to indicate that the effect of resection of ganglia and trunks is more complete in the feet than in the upper extremities.

Postoperative Sequelae

The unfavorable or untoward symptoms which may be anticipated as a result of this operation are as follows:

- 1 Increased temperature of the skin may give rise to itching in hot weather
- 2 Occasional difficulty in healing of a surgical wound.
- 3 Pain in the large muscles, disappearing gradually in eight or ten weeks
- 4 The Horner's syndrome with diminished sweating, and narrowing of the palpebral fissure. This is disfiguring and annoying if unilateral, but not complained of if bilateral.

In addition to the work described in cases of scleroderma, Brown, associated in this instance with Allen⁶ has reported on the surgical treatment of seventeen cases selected out of a group of 157 cases of uncomplicated Raynaud's, in which the same operative principle was employed for the relief of symptoms.

They feel that in such carefully selected cases, and with a thoroughly executed operation, an actual cure may be expected. As might be anticipated, the percentage of satisfactory results is much lower in cases presenting complications mentioned previously, yet surgery still offers the best therapeutic solution of the problem in these instances.

In 1932 Zimmern¹² developed the theory that the application of x-ray to the suprarenal capsules might be of benefit in checking the physiologic mechanism of endarteritis and allied states. Durante had resected the greater and lesser splanchnic nerves in cases of Buerger's and Raynaud's, both of which were associated with hypertension, and obtained excellent results with steady retrogression of the pressure. Zimmern contended that equally brilliant results could be obtained by high voltage Roentgen therapy, with greater ease of application.

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LAKE KEUKA MEDICAL AND SURGICAL ASSOCIATION

The Lake Keuka Medical and Surgical Association will hold its annual two-day meeting on the shore of Lake Keuka near the village of Penn Yan on July 16-17. This year will mark the thirty-seventh convention.

This Association is comprised of representative members of the medical profession who practice in the following counties: Allegany, Chemung, Cortland, Cayuga, Erie, Genesee, Livingston, Madison, Monroe, Niagara, Onondaga, Ontario, Oneida, Orleans, Schuyler, Seneca, Steuben, Tioga, Tompkins, Wayne, Wyoming, Yates, and also in Northern Pennsylvania.

PROGRAM

Thursday, July 16

9 30 A.M. E.S.T.

Floyd S. Winslow, M.D., F.A.C.S., President of the Medical Society of the State of New York. "Trends in the Progress of Medicine"

Karl M. Wilson, M.D., F.A.C.S., Chief Obst. & Gyn. Strong Memorial Hospital, Rochester, N.Y. "Some Points in Connection with Ovarian Hormone Therapy"

Charles C. Higgins, M.D., F.A.C.S., Cleveland Clinic, Cleveland Ohio. "Recent Experimental Observations Dealing with the Produc-

tion and Solution of Urinary Calculi and the Clinical Management of Patients"

2 00 P.M.

Mr. C. E. Sackett, Bureau of Investigation, Department of Justice. "The Work and Functions of the Federal Bureau of Investigation"

Edgar Burke, M.D., F.A.C.S., Jersey City Medical Center. "Some Aspects of Traumatic Surgery of the Abdomen"

Stuart W. Harrington, M.D., F.A.C.S., Mayo Clinic. "The Surgical Treatment of Diaphragmatic Hernia." (An analysis of over 100 cases with a moving picture showing the author's surgical technique)

July 17

9 30 A.M. E.S.T.

L. A. Lawson, Professor of International Relations, Hobart College, Geneva, New York. "A Twentieth Century Policy for America"

Herman O. Mosenthal, M.D., Professor of Medicine, New York Post-Graduate Medical School and Hospital. "Diagnosis, Symptoms, and Treatment of Chronic Diffuse Glomerular Nephritis"

George Crile, M.D., F.A.C.S., Cleveland Clinic, Cleveland Ohio. "Mechanism and Surgical Treatment of Essential Hypertension."

The afternoon will be free for those desiring to avail themselves of the opportunities afforded for fishing, golfing, boating, etc.

THE MORON MOTOR MENACE

An automobile driver in New York City who has been involved in many accidents in the past two years was found on examination to be a low-grade moron with a mental age of less than ten years. He had run down a seventy-year-old man on Coney Island Avenue, had struck a girl riding a bicycle in Coney Island and had been involved in a crash at Park Place and Broadway, Manhattan, in which seven persons were injured. Other traffic violations against him concerned excessive speed, failure to keep to the right, failure to obey non-parking signs, driving through a children's play street and other offenses.

Magistrate Solomon was forced to suspend sentence on him since his mental in-

competence made any punishment impossible. The magistrate cancelled his driving license.

The magistrate said:

"The drunken driver is bad enough, but a drunken driver may be otherwise a man or woman of intelligence. This case crystallizes and dramatizes an important issue. How many thousands of persons of the same character, or lack of it, are driving cars in the streets of our city endangering life, limb and property? How did this man get his license in the first instance?"

"I consider this case the most significant that has come before me in the time I have sat in this court. It should serve as a starting point for an organized movement to clear our streets of this menace."

thectomies performed for the relief of thromboangitis obliterans during the years 1925 to 1932. This series included eighty-nine bilateral lumbar sympathetic ganglionectomies and trunk resections, and fifteen bilateral cervicothoracic ganglionectomies with resection of the upper portion of the thoracic trunk. Of this number, ninety-six patients were males and four were females. They noted that the disease occurred chiefly in the fourth decade, and that the average duration of symptoms on admission was about four years. Many of the patients had had toes and extremities amputated before admission and, in seven cases, the disease had progressed to such an extent that it was impossible to save the extremities by sympathectomy. In all, 104 operations were performed, and the results were an average improvement in intermittent claudication and rest pain of eighty-five percent, and an average degree of improvement of eighty percent.

Horton and Brown¹⁴ are of the opinion that the prognosis in this disease depends to a considerable extent upon the interval of time between relapses, stating that if the interval is long, collateral circulation becomes adequate and sufficient blood supply of the distal areas is assured. In their experience in a large number of cases of this disease, a high percentage of poor prognoses regarding amputation is not justified, their estimation being that about twenty to thirty per cent of patients will lose one or more limbs.

Berg in a recent paper on "Non-specific Inflammatory Disease of the Small and Large Intestine"¹⁵ gave full credit to the results obtained with the medical treatment of nonspecific ulcerative colitis, but called attention to the tendency of this disease to recur, stating that resection of the bowel seemed to offer the only hope of a permanent cure. He advanced the hypothesis that the viscera, or certain portions thereof, may be under direct control of certain centers high up in the autonomic system, which have never been demonstrated and which may be closely allied to the many cerebral centers with which we are familiar. This being the case, a disturbed physiological function in such a center might be expected to permanently exert an unfavorable influence upon the viscus under its control, which fact would account for the tendency of

ulcerative lesions, such as mentioned, to recur at regular intervals. It is upon this theory that he recommends removal of the sensitized portion of the bowel as soon as the diagnosis has been established.

Such an hypothesis is compatible with our ideas concerning the vasospastic diseases of the extremities, and should make us consider more carefully the relationship between the central nervous system and the autonomic, and the possible influence of chemical and toxic substances in the production of such clinical states.

Summary

1 In this study, four definite clinical diseases affecting the extremities are reviewed.

2 Two of the diseases are vasospastic in character, and two are dependent upon definite occlusion of the vessels.

3 While all four diseases have been recognized and described for many years the etiology in three of them is still unsolved.

4 Raynaud's disease is characterized by its marked predominance in females, whereas Buerger's disease occurs for the most part in males in the second, third, and fourth decades, predilection being noted in Polish and Russian Jews.

5 Scleroderma offers little difficulty in diagnosis because of the cutaneous manifestations. The tendency of obliterating endarteritis to occur in the elderly arteriosclerotic individual with atheromatous changes demonstrable especially by x-ray serves as a diagnostic guide.

6 Medical treatment thus far has yielded no brilliant results, but in cases of Buerger's disease, Raynaud's disease, and scleroderma—more particularly in the latter two—encouraging results in arresting the progress of the disease have been obtained by ramisection and ganglionectomy.

7 Sufficient time has not yet elapsed to prove to everyone's satisfaction, the practical value and harmlessness of such extensive interference with a mechanism so delicately balanced as the autonomic nervous system.

8 Inspiration is given, however, to investigators in the fields of anatomy, physiology, and neuropathology to establish a clearer concept of the factors responsible for aberrations in the physiological behavior thereof.

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Pathological hemolysis also entails reactions upon the hepatic tissue. The marked degree of bilirubinemia in familial jaundice has been the basis of diagnostic separation of a group of conditions characterized by jaundice. The individual hepatic cell destroys soluble toxins, and particulate matter is stored in the liver cells. The spleen exercises a similar function, but on a smaller scale than the Kupffer cells of the liver. These cells act pre-eminently as phagocytes and whether in the liver or spleen ingest foreign particles, erythrocytes, iron pigment, and bacteria. After the performance of an Eck's fistula, all the experimental animals died in six to eight weeks of a general septicemia. It is rather widely held that the liver and spleen separately or jointly act as sieves to strain out bacteria. Without the interposition of the liver between the portal system and the general circulation, few people could survive, as septicemia would be the rule. In considering changes in the liver, it is important to remember that one of the vital functions of the liver is regeneration, and an individual maintains relatively good liver functional capacity if and when the regenerative process is equal to any simultaneous degenerative process.

Operations involving the omentum such as division of the omentum with crushing by ligature, as in herniotomies, are followed by aseptic infarcts in the liver in approximately one-third of the cases, and indicate the frequency of secondary liver involvement. The classical example of cause and effect in this liver-abdominal mechanism is exhibited in acute gangrenous appendicitis, followed by septic pyelophlebitis and multiple liver abscesses. Sudler, in a remarkable contribution, first drew attention to the lymphatic connection of the gall-bladder and the liver. He indicated the possibility of reversal of lymphatic current, either from gall-bladder to liver or from liver to gall-bladder. Braithwaite demonstrated a continuous lymphatic route from the appendix to the pancreas, pylorus, and gall-bladder.

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Complemental to these studies was the contribution of van den Bergh, who demonstrated that there were two different types of blood sera in jaundice, each having specific characteristics and each the direct result of the chemical or mechanical mechanism that produced the jaundice. Klempfer, Kilhan, and Heyd declared that so-called catarrhal jaundice was a degenerative process of the liver, and was one of a series of degenerative changes that extend from mild transient jaundice to the grave and complex picture of acute yellow atrophy. These authors predicated that there were variable etiologic factors in the chemistry of catarrhal jaundice dependent upon the type of bacteria and mechanism of their action upon the hepatic tissue.

The pathological changes in the liver in the presence of obstructive jaundice are obviously gross, for within a very short time after the initiation of an obstructive jaundice there is a progressive degeneration of liver cells, either locally or generally. There is an intense chemical, and possibly infective irritation, with the production of a severe edema and hyperemia of the liver. As a result of these two factors, there ensues further liver damage from compression, with strangulation of the liver cells. The end result is a true hepatosis. If such a liver

THE LIVER AND GALL-BLADDER DISEASE

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Every case of disease of the gall-bladder is associated with secondary changes in the common and hepatic ducts. It is not without interest that in 557 cases personally operated upon for gall-bladder disease, 11.9 per cent had visible and palpable evidence of disease in the common duct sufficient to require choledochotomy, 10.5 per cent of the cases were complicated by ulcer of the stomach and duodenum, 16.3 per cent were associated with jaundice, and twenty-one or 3.7 per cent were associated with subacute pancreatitis requiring pancreatic drainage. In 65.1 per cent of the gall-bladder cases an appendectomy was performed at the same time as the gall-bladder operation. The incidence of infection in the appendix, the age group of the patients, and the sequential pathological changes in the pancreas, gastroduodenal zone, and liver can be represented by an inverted pyramid, with the initiatory focal point in the gastrointestinal tract, and the summation of pathological changes in the upper abdomen—appendix, gall-bladder, and ulcer—a trinity of diseased viscera.

The multiplicity of functions exercised by the liver have rendered it impossible to obtain up to the present time any sure criteria of liver function and competency. Various tests have been devised which give reasonable chemical data of one or more of the hepatic functions, but none

is competent to render surgical appraisal of the reparative and functional capacity of the liver.

It is apparent that protein derivatives are extremely deleterious to a failing or incapacitated liver. A patient with well-developed cirrhosis may have an unusual prolongation of life when restricted to a diet of carbohydrates and vegetable proteins, and on the contrary has a rapid lethal termination on a high protein diet. The unknown chemistry of the intermediate steps of protein metabolism in the liver is inscrutable. We understand fairly adequately the beginning of protein metabolism and its final end product, but the vast domain of incompletely formed split proteins or amino compounds is for the present unknown. The role of fats and cholesterol is likewise confusing, while the knowledge of carbohydrate metabolism is definite and precise. Adams indicated that leukocytes are constantly migrating through the surface layers of the intestinal tract, carrying with them fat globules and bacteria. According to MacCallum, if a fasting animal is given peptonate of iron, leukocytes containing iron particles can be identified in the wall of the gut, and in the liver and spleen. When the intestinal wall is inflamed the mechanism of migration of leukocytes and bacteria is greatly facilitated. These bacteria under ordinary circumstances are destroyed, and there is no infection and no multiplication of bacteria within the tissues. With the destruction of bacteria, there is a liberation of toxins and the persistent action of liberated toxins brings about definite degenerative changes. The colon bacilli, under ordinary circumstances, have little effect upon normal tissue, but let there arise some disturbance of metabolism or other form of intoxication, and the liver is rendered highly susceptible to bacterial infection.

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were removed from the body and allowed to be suspended, it would hold a quantity of serum, anywhere from 1000 to 1500 c.c. This may be taken to indicate the prominent factor of hydrostatics in a liver injured by obstructive jaundice.

Increasing study and research in the domain of chemistry as applied to liver function has enlarged the indications for surgical intervention. The transference of so-called "acute catarrhal jaundice" to the group of liver degenerations has introduced an enlarging group for surgical consideration. The element of hydro-hepatosis and hepatic edema from liver degeneration indicates that some of the early postoperative complications, such as secondary cholangitis with obstructive jaundice after simple cholecystectomy, may be associated with definite and severe secondary liver damage.

A young man, twenty years of age, entered the hospital complaining of jaundice, nausea, and vomiting. The patient had influenza about six weeks before entering the hospital. On admission he was intensely jaundiced. Physical examination was negative, except for tenderness in the right upper quadrant, a palpable liver and palpable spleen. The leukocyte count was 11,800, seventy-four per cent polynuclearphils, red cells 4,952,000 per cubic mm, hemoglobin ninety-six per cent, platelets 224,600 per cubic mm, the Wassermann was negative, the icteric index was 100, van den Bergh direct +, van den Bergh indirect + + +, Fouchet + + +. Eleven days after admission, the icteric index was 166.6, van den Bergh direct + + + +, van den Bergh indirect, + + + +, Fouchet + + + +. X-ray examination of the gall-bladder region revealed no evidence of calculi. The right lobe of the liver was markedly enlarged, but its free border was quite smooth. X-ray examination of the kidneys was negative. X-ray examination of the gastrointestinal tract was negative, except at the end of twenty-four hours there was considerable irregular distribution of the barium meal suggesting variations of colonic spasm with a stasis of material in an irregularly filled segmented appendix. The stools were uniformly clay-colored, but did give a trace of bile.

For fourteen days the intensity of the patient's jaundice increased and his physical condition became worse. It was our feeling that we were dealing with a toxic hepatitis, with marked destruction of liver cells, and that the initial trauma was a toxic proc-

ess incident to and sequential to an upper respiratory infection. In the early stages the condition was not dissimilar from what is referred to as catarrhal jaundice. However, at the height of the disease other factors entered the picture: (1) the destruction of liver cells, (2) the mechanical blocking of the intrahepatic bile canaliculi, and (3) a reactive inflammatory edema. It was the opinion of all the consultants that exploratory laparotomy was justified and at operation the following was noted. The liver was found to be about twice the size for the patient's age, weight, and stature. There was no evidence of fibrosis of the capsule of Glisson. There was about 300 c.c. of pale amber ascitic fluid in the abdomen. The gall-bladder was thickened without stones, increased thickness of the gall-bladder wall was apparently due to edema. The common duct was narrow, not thickened or dilated. The lymph glands at the junction of the cystic and common ducts were enlarged. The pancreas, if anything, was softer than usual. The gastroduodenal segment was negative.

Operation consisted of a cholecysto-gastrostomy with the application of the gall-bladder to the lesser curvature of the stomach about three cm. from the pyloric ring. The suture line was reinforced by wrapping a portion of the greater omentum about it and a small cigarette drain was inserted into Morrison's space.

Aside from nausea, which lasted for six days, the postoperative convalescence was uneventful. Seven days after operation the icteric index dropped to 101, while the van den Bergh direct and indirect were still + + + + and the Fouchet + + + +. Two weeks after operation the icteric index was sixty-five, van den Bergh direct and indirect + + +, Fouchet + + +. From this time on the patient had a constantly diminishing jaundice and was discharged on the twenty-sixth day after operation with normal colored stools and practically free from jaundice, although the sclera were suggestively yellow.

This patient presented a condition characterized by an intense progressive jaundice that was sequential or associated with a febrile attack. The clinical and chemical evidence was such as to suggest complete biliary obstruction. The opinion of his attending physician was that this patient had had an initial attack of influenza. The stools in the beginning were bile-colored, but later became clay-colored with practically an entire absence of bile. This was the third case of this type in

three years and in none of them was the gall-bladder palpable nor was there any suggestion as to the applicability of Courvoisier's law. X-ray studies did not reveal any gall-bladder disease. The liver on laparotomy was smooth and glistening and nearly of normal color, but of about twice the normal size. There was no evidence of interstitial fibrosis such as is observed in long-continued abdominal affections and gall-bladder disease. The gall-bladder itself was edematous and hypervascularized, and did not contain bile but colorless mucoid material. Cystic and common ducts were not obstructed, although edematous. It would seem that the underlying pathology in this patient was that of an infectious or toxic condition with degeneration of the hepatic parenchyma. As a result of the destruction of the liver cells the bile canaliculi became blocked with broken-down cellular detritus and bile thrombi. The cytolysis of liver cells continues with a collection of bile into so-called "lakes," thus there are two pathological factors at play, (1) the primary destructive action as the result of the hematogenous process and (2) the mechanical feature with obstruction of the small bile canaliculi. The final result so far as the liver was concerned was the development of a marked and gross edema of the entire liver—a condition well described as a hydro-hepatosis.

Heyd in 1922 drew attention to certain infrequent but dramatic postoperative complications following gall-bladder surgery. In brief, he drew attention to three types of postoperative conditions that seemed to be in their nature chemical, and not due to the operative technic *per se*.

Group I So-called "liver-deaths", characterized by hyperpyrexia immediately after operation, coma, and death.

Group II Cases operated upon for obstructive jaundice and in the presence of a diminishing icterus index developing coma, and dying.

Group III Postoperative cases developing the picture of extreme shock thirty-six to forty-eight hours after operation, and improved by fluid intake.

In the intervening years numerous observers have been interested in these syndromes, and competent opinion has been expressed as to their authenticity.

The status of these postoperative complications may perhaps be fairly summarized as follows:

In Group I the so-called "liver deaths" are definite and are the result of a disturbed or altered chemistry incident to liver failure. In Group II the cases are relatively in the same position as in Group I. In Group III the cases are associated with more far-reaching chemical disturbances, in which renal functions and water balance are pronounced factors.

In thirty-nine deaths out of 557 unselected cases, or a mortality of seven per cent, there were eight so-called "liver deaths," giving a mortality *per se* of 14.3 per cent. In the "liver deaths," there were two in Group I, three in Group II, and three in Group III. This indicates the increase in the mortality rate in the delayed or late cases of gall-bladder disease. In all of these lethal cases there was definite visible evidence of liver change, particularly in the degree of glissonitis or fibrous changes in the capsule of the liver. This mortality of 14.3 per cent is in striking contrast with a 3.3 per cent mortality in uncomplicated cases of cholecystectomy.

The physiological competency of the liver is directly responsive to the availability of tissue water. The mobilization of water by adequacy of supply, and the acceleration of its circulation are factors of pre-eminent importance in safeguarding a patient preoperatively and postoperatively. It is significant that the gastroenteric hepatic circulation of fluid varies from 7500 to 10000 c.c. *per diem*. It is probable that outside of grave cardiac disability the acceleration of circulation of fluid is not of great importance, and the physiological disiderata are the mobilization of water and the adequacy of its supply. Water metabolism embraces two distinctive phases: (a) the intake, and (b) the output. The factors of intake are readily controlled and readily measured, being the sum total of all fluid taken into the body as fluid *per se*, or as the water complement of food. The items of output are difficult, and vary with change in the character of the patient's pulse, temperature, and respiration. The water loss can be canvassed as follows: (a) cutaneous water loss, 1000–1500 c.c., (b) urinary water loss, minimum 500 c.c., (c) stool water loss, (d) respiratory water loss, and (e) water loss in vomiting or gastric

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ess incident to and sequential to an upper respiratory infection. In the early stages the condition was not dissimilar from what is referred to as catarrhal jaundice. However, at the height of the disease other factors entered the picture: (1) the destruction of liver cells, (2) the mechanical blocking of the intrahepatic bile canaliculi, and (3) a reactive inflammatory edema. It was the opinion of all the consultants that exploratory laparotomy was justified and at operation the following was noted. The liver was found to be about twice the size for the patient's age, weight, and stature. There was no evidence of fibrosis of the capsule of Glisson. There was about 300 cc of pale amber ascitic fluid in the abdomen. The gall-bladder was thickened without stones, increased thickness of the gall-bladder wall was apparently due to edema. The common duct was narrow, not thickened or dilated. The lymph glands at the junction of the cystic and common ducts were enlarged. The pancreas, if anything, was softer than usual. The gastroduodenal segment was negative.

Operation consisted of a cholecystogastrostomy with the application of the gall-bladder to the lesser curvature of the stomach about three cm from the pyloric ring. The suture line was reinforced by wrapping a portion of the greater omentum about it and a small cigarette drain was inserted into Morrison's space.

Aside from nausea, which lasted for six days, the postoperative convalescence was uneventful. Seven days after operation the icteric index dropped to 101, while the van den Bergh direct and indirect were still +++++ and the Fouchet +++++. Two weeks after operation the icteric index was sixty-five, van den Bergh direct and indirect +++, Fouchet +++. From this time on the patient had a constantly diminishing jaundice and was discharged on the twenty-sixth day after operation with normal colored stools and practically free from jaundice, although the sclera were suggestively yellow.

This patient presented a condition characterized by an intense progressive jaundice that was sequential or associated with a febrile attack. The clinical and chemical evidence was such as to suggest complete biliary obstruction. The opinion of his attending physician was that this patient had had an initial attack of influenza. The stools in the beginning were bile-colored, but later became clay-colored with practically an entire absence of bile. This was the third case of this type in

three years and in none of them was the gall-bladder palpable nor was there any suggestion as to the applicability of Courvoisier's law. X-ray studies did not reveal any gall-bladder disease. The liver on laparotomy was smooth and glistening and nearly of normal color, but of about twice the normal size. There was no evidence of interstitial fibrosis such as is observed in long-continued abdominal affections and gall-bladder disease. The gall-bladder itself was edematous and hypervascularized, and did not contain bile but colorless mucoid material. Cystic and common ducts were not obstructed, although edematous. It would seem that the underlying pathology in this patient was that of an infectious or toxic condition with degeneration of the hepatic parenchyma. As a result of the destruction of the liver cells the bile canaliculi became blocked with broken-down cellular detritus and bile thrombi. The cytolysis of liver cells continues with a collection of bile into so-called "lakes," thus there are two pathological factors at play, (1) the primary destructive action as the result of the hematogenous process and (2) the mechanical feature with obstruction of the small bile canaliculi. The final result so far as the liver was concerned was the development of a marked and gross edema of the entire liver—a condition well described as a hydro-hepatosis.

Heyd in 1922 drew attention to certain infrequent but dramatic postoperative complications following gall-bladder surgery. In brief, he drew attention to three types of postoperative conditions that seemed to be in their nature chemical and not due to the operative technique *per se*.

Group I So-called "liver-deaths," characterized by hyperpyrexia immediately after operation, coma, and death.

Group II Cases operated upon for obstructive jaundice and in the presence of a diminishing icterus index developing coma, and dying.

Group III Postoperative cases developing the picture of extreme shock thirty-six to forty-eight hours after operation, and improved by fluid intake.

In the intervening years numerous observers have been interested in these syndromes, and competent opinion has been expressed as to their authenticity.

The status of these postoperative complications may perhaps be fairly summarized as follows:

In Group I the so-called "liver deaths" are definite and are the result of a disturbed or altered chemistry incident to liver failure. In Group II the cases are relatively in the same position as in Group I. In Group III the cases are associated with more far-reaching chemical disturbances, in which renal functions and water balance are pronounced factors.

In thirty-nine deaths out of 557 unselected cases, or a mortality of seven per cent, there were eight so-called "liver deaths," giving a mortality *per se* of 14.3 per cent. In the "liver deaths," there were two in Group I, three in Group II, and three in Group III. This indicates the increase in the mortality rate in the delayed or late cases of gall-bladder disease. In all of these lethal cases there was definite visible evidence of liver change, particularly in the degree of glissonitis or fibrous changes in the capsule of the liver. This mortality of 14.3 per cent is in striking contrast with a 3.3 per cent mortality in uncomplicated cases of cholecystectomy.

The physiological competency of the liver is directly responsive to the availability of tissue water. The mobilization of water by adequacy of supply, and the acceleration of its circulation are factors of pre-eminent importance in safeguarding a patient preoperatively and postoperatively. It is significant that the gastroenteric hepatic circulation of fluid varies from 7500 to 10000 cc *per diem*. It is probable that outside of grave cardiac disability the acceleration of circulation of fluid is not of great importance, and the physiological disiderata are the mobilization of water and the adequacy of its supply. Water metabolism embraces two distinctive phases: (a) the intake, and (b) the output. The factors of intake are readily controlled and readily measured, being the sum total of all fluid taken into the body as fluid *per se*, or as the water complement of food. The items of output are difficult, and vary with change in the character of the patient's pulse, temperature, and respiration. The water loss can be canvassed as follows: (a) cutaneous water loss, 1000–1500 cc, (b) urinary water loss, minimum 500 cc, (c) stool water loss, (d) respiratory water loss, and (e) water loss in vomiting or gastric

drainage It must be recognized that the water loss from the skin surface varies with the temperature of the environment—the dryness or the humidity—and the muscular labor upon the part of the individual, as well as the presence or absence of metabolic disturbances associated with increased oxidation (plus basal metabolism) or temperature Newburg indicated that as much as ten liters of water may be lost through the skin in a day It should also be recognized that the loss of water by the skin is obligatory and will not fall much below a very definite minimum The organism in order to maintain the cutaneous loss will withdraw water from the kidneys so that a diminished output of urinary water will indicate the beginning of dehydration 500 c c of water *per diem* would be the minimum kidney water necessary to carry off the solid urinary matter with a specific gravity of 1030 Any urinary water below 500 c c means the retention of urinary products, a rise in the non-nitrogen protein in the blood, which in turn increases toxic retention, elevates temperature, causes more loss of water from the cutaneous surface, and projects the individual into a dangerous state of dehydration

There exists in a body physiology two types of water the so-called preferential water and the water of urinary excretion The major factor in the preservation of life is the preferential water, that X quantity of water that is absolutely essential for the vital function of the individual cell If this amount of water is depleted below a certain minimum, cell death occurs It is depression of this preferential water below normal requirements that makes dehydration such a significant and

dangerous clinical condition Loss of body fluid of six per cent of the body weight produces a clinical condition of dehydration, a loss of eight per cent is dangerous, and ten per cent lethal It is interesting that a person may lose fifty, sixty, or seventy per cent of their body fats, proteins, and carbohydrates, and yet be able to sustain life, while a loss of fourteen to twenty per cent of tissue water is attended by grave danger The conservation of preferential water is the outstanding protective response of the body to water loss The loss from all other emunctories is restricted in order to conserve preferential water It follows, therefore, that the loss by insensible perspiration is diminished, giving the dry skin and mucous membrane Urinary loss of water falls below the amount of water necessary to carry away the excrementitious by-products of metabolism The non-protein nitrogen content of the blood rises and a false impression is created that the condition is one of uremia or renal failure It is our opinion that when this clinico-chemical condition is recognized, there is no actual pathological change in the kidney, for the kidney under proper stimulation by forced water intake will resume its water output, and the non-protein nitrogen of the blood will also fall In the third liver group this factor of hypohydration is probably the predominant effect. This may account for the fact that various observers have been inclined to attribute the underlying factors for this group to a defect of kidney function Certainly there is a defect of renal elimination, but it is secondary to obscure and unknown factors in hepatic function

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THE BASIC SCIENCE LAW

The basic science law, which has been reviewed in the American Medical Association *Bulletin* at different times during the past nine years, and is in operation in ten states, has for its object a raising of the standards of service rendered to the sick by all persons representing any method or school of healing The main objective is the protection of the public. The Board of Examiners consists of five members a professor of chemistry, a pathologist, an anatomist, a physiologist, and the state bacteriologist If an applicant succeeds in passing the ex-

amination before the Basic Science Board, he is given a certificate of ability This certificate gives him the privilege of going before any other examining board in the healing arts One of the results of the law has been the failure of cultists to gain license In Nebraska, where the law became effective in 1928, no chiropractor has attempted to become licensed The public has accepted the law and its results with practically no criticism — *Bulletin, Eric Co Med Soc*

LOW BACK PAIN

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Backache is a symptom and like headache the detection of its cause requires the utmost skill of the general diagnostician. To relegate backache to the orthopedist would be as sensible as relegating headache to the neurologist. It is one of the most common complaints of patients as they present themselves in the Arthritis Clinic of the New York Post-Graduate Hospital, and an every day problem to the general practitioner. The causes of backache may be medical, orthopedic, urological, neurological or gynecological in origin. The first prerequisite therefore is a thorough medical examination to eliminate so-called referred pain, from such things as constipation, hemorrhoids, prostatic disease, and disturbances of the female organs especially retroversion and retroflexion. A disordered back may cause a pain in the leg and a diseased uterus may cause a pain in the back. The role of gynecological disturbances in backache however, has probably been grossly exaggerated. Important as these causes may be in the occasional case, the fact remains that the etiology will usually be found in the spine itself, and especially its related muscles and ligaments.

The conditions in the spine and related structures which must be considered are (1) congenital anomalies (2) traumatic disturbances, (3) rheumatic and arthritis manifestations, (4) poor body mechanics, and (5) most important of all, a combination of these causes. There is no point here in giving a long list of subdivisions under those headings. Any medical school student can enumerate twenty or more causes of low back pain. The point to be emphasized is that all these causes are important, but that most of them would not give symptoms were it not for the super-

imposed development of trauma or of the static trauma of bad posture. Goldthwaite has decided that ninety per cent of backache is due to postural defects. Thus backache is the price which man has to pay for his departure from the position of the quadruped.

The x-ray findings are often added pitfalls in the diagnosis of the causes of low back pain. They may reveal conditions which might be, but are not, the cause of pain. Most important of all the x-ray is usually negative.

There are very many congenital defects visualized by examination and x-ray in the lumbosacral area. Someone has said "There is no such thing as a normal fifth lumbar vertebra." Schmorl and Jung-haus, after examining 10,000 vertebrae could not determine what was a normal fifth lumbar. We may have six or four lumbar vertebrae. The neural arch may not fuse, causing spina bifida. There may be sacralization of the fifth lumbar in one of many ways. It is important when seeing a patient with backache to know if these congenital anomalies exist, but one is usually too prone on taking an x-ray and finding a sacralization of the fifth lumbar to say "Ah there is the cause of the backache," forgetting that the patient has carried this anomaly through life and is symptom free until we see him. Let us say, at the age of thirty-five. What excites the symptoms? The answer is usually trauma or more important still the static trauma of poor posture.

Under traumatic causes we might mention ligamentous or muscular strain. It is the opinion of some observers that if the pain is increased by active muscular movement the cause may be muscle strain. If passive movements elicit the greatest pain, then ligamentous strain is probably the cause. Other traumatic conditions are sacroiliac and lumbosacral sprain, spondylolisthesis, and fractures.

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We will pause a moment only on the subject of sacroiliac dislocation. It is considered by most students of the subject that such a condition actually takes place, even with small amounts of trauma. However, it is probable that the role of sacroiliac strain and dislocation has been grossly exaggerated as a frequent cause of backache. This problem warrants extensive research.

Rheumatic and arthritic manifestations are of great importance as a cause of low back pain especially in elderly people. Today we divide chronic arthritis into two large groups. In the ordinary rheumatoid arthritis as seen in the young adult, low back pain is not commonly an important factor, except in that special type of arthritis called Marie Struempell arthritis. In the osteoarthritis of middle and later life however, low back pain is one of the prominent symptoms. X-ray examination may reveal a narrowing of the intervertebral cartilages and lipping at the edges of the bones. Lipping is most common in the lumbar area. Here again the pathology as revealed by the x-ray must be accepted as the cause of the backache only with the greatest caution. Lipping of the lumbar spine is common after forty, and universal after sixty. In most subjects the lipping is discovered accidentally as in the course of genitourinary radiography and gives no symptoms. The patients with osteoarthritis who complain of back pain are usually obese, have muscle strain from weak feet, and postural defects especially a lumbar lordosis. These factors bring out the symptoms.

Since the intervertebral junctions are not true joints, the term osteoarthritis as applied to these conditions is a misnomer. "Spondylosis" is probably a better term. The only true joints in the spine are between the articular facets, and the sacroiliac joint. These joints are covered with hyaline cartilage and have a joint space, synovial membrane, and synovial fluid. When the rheumatic disturbance affects these, a great deal of pain may result.

Lumbago, once a popular diagnosis, is probably not common. I conceive lumbago as a fascitis, a rheumatic involvement of the white fibrous fascial planes in the muscles of the back.

An important cause of back pain in arthritis is the pressure effects of these rheumatic manifestations on the nerves. It has been shown that the foramen between the fifth lumbar and the first sacral vertebra is the smallest intervertebral foramen and yet the fifth lumbar is the largest spinal nerve. Sicard called these foramen the crossroads of neuralgia. In addition, the fifth lumbar nerve lies in close proximity to the sacroiliac joint and the first and second sacral roots join it to form the lumbosacral cord at the lower margin of this joint. Pathology of this joint such as due to arthritis or trauma could irritate the nerve causing pain in the sciatic distribution.

In regard to treatment of low back pain only a few general principles will be touched upon. An important form of treatment is manipulation. Only two purposes can be achieved by its employment, (1) the replacement in apposition of displaced articular surfaces and (2) the breaking down of obstructions to movement. Active manipulation on the part of the patient is in my mind of greatest importance especially when the movements which cause most pain are performed. Active motion with discretion is much more effective than the indiscriminate rest so often advised. Prolonged rest as in a cast usually entails a long period of rehabilitation due to muscle and bone atrophy. Injury to a joint or to the muscles associated with it usually results in the fixation of that joint by involuntary muscular activity in order that recovery may be facilitated. However, when once involuntary muscular activity has been originated for the purpose of fixing a joint, it is liable to persist as a "habit" phenomenon for months, or even years, after the need for fixation of the joint has ceased.

The general treatment of arthritis, of which the manifestations in the back are only a phase, cannot be considered here. Beside the usual treatments for arthritis, we now have two very direct methods of treating this type of pain. One is by paravertebral injection of novocain or alcohol, thus blocking off pain along the entire distribution of the nerve injected. The two techniques described are those of Labat and Lundy.

The second is by epidural injections. These give striking effects at times in involvement of the nerve roots in the intervertebral bony canal through which the nerve roots pass. This has been called neurodocitis. The patient lies on the affected side or in the knee-chest position. The spot between the two coccygeal cornua is novocamized and a lumbar puncture needle introduced through the posterior sacrococcygeal ligament. The needle is passed up into the epidural space about three inches on a line parallel with the posterior surface of the sacrum. Then forty c.c. of one per cent novocain and eighty c.c. of normal saline is injected. Very little pressure is required. If the results are not permanent, the injection may be repeated. Diathermy applied to the lower back and sciatic nerve distribution is advised after epidural injection.

The treatment of the postural defects which are so often the exciting factors in backache, and often are the sole cause, is of the greatest importance and is most commonly neglected. One of the most important postural defects is weak feet. For an intelligent correction of these defects a definite idea of the evolutionary factors involved, of the criteria of good posture, and of the mechanism by which good posture is maintained, is essential.¹ The all-important factor in posture is the pull of gravity. The nearer the body weight is distributed around the theoretical line of gravity, the more easily will erect posture be maintained. When men try to lift a heavy object such as a telegraph pole from a horizontal position to an erect one, a great deal of effort will be required until the erect position is attained when a minimum amount of effort will maintain it in this position. This erect posture in man should be held not by conscious muscular effort, but by the equal balance of opposing muscles in tonus.

Man has evolved to the position of an erect biped from his quadruped forebears. This erectness did not develop by gradual stages from a horizontal to a vertical position. The quadrupeds from which man evolved first took to the trees and led an arboreal, brachiating existence. The body was suspended by

the arms. The shoulder joints developed their marvelous range of motion. Gravity extended the legs at the hips and knees. Subsequently our forebears dropped to the ground, the force of gravity was reversed, and the spine now became a supporting column. The spine developed a dorsal kyphosis and a lumbar lordosis as a result of the forward components of force set up by the weights of the head, shoulder girdle, thorax, and abdomen.

Most postural defects are the result of an exaggeration of this lumbar lordosis, associated with which is a forward tilt of the pelvis. In good posture and this excludes over seventy per cent of young men entering college, a plumb line dropped from the mastoid process will bisect the tip of the shoulder and the hip joint, and will fall somewhat anterior to the center of the knee joint. It will lie in the plane of the scaphoid bones of the feet. The back will be straight, the knees slightly hyperextended. There will be no evidences of weak feet. In this short contribution, the subject of weak feet in relation to backache can hardly be more than mentioned. The role of weak feet in causing backache cannot, however, be exaggerated.

In poor posture the head is held forward, there is an exaggeration of the dorsal kyphosis, the chest is depressed, the inclination of the ribs is increased. There is an exaggeration of the lumbar lordosis, the pelvis is tilted downward and the abdomen protrudes. The knees are markedly hyperextended.

It is our opinion that the key to most of these postural defects is the exaggeration of the lumbar lordosis, and treatment is directed at its correction mainly. Indiscriminate exercise has no effect. Many athletes with excellent muscular development exhibit evidences of poor body mechanics and suffer the consequences in backache and digestive disorders. The exercises recommended are those which tilt the front of the pelvis upward and the back of the pelvis downward and thus straighten the lumbar spine and restore the normal alignments of the body above and below. The details of these exercises are beyond the limits of this contribution.

Conclusion

I have attempted to review in a very general way the problem which confronts the physician when his patient complains of backache. I wish to reiterate that a thorough general examination for predisposing causes is essential. The

exciting causes however, are of still greater importance. Foremost among these are trauma, but above all the static trauma of weak feet and poor posture.

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GROUP HOSPITAL PLANS SPREADING

Group hospital plans are increasing so rapidly that they are now at work in more than fifty towns and cities in the United States and twenty-five in Canada. From September, 1934, to October, 1935, the number of subscribers in the United States grew from 100,000 to 250,000, and are presumably many more now. Payments range from 30 cents to \$1 a month, depending on the scope of the benefits and the class of subscribers, according to an article in the *Bulletin* of the American College of Surgeons by C. Rufus Rorem, Ph.D., C.P.A., Consultant on Group Hospitalization of the American Hospital Association. He states that the following communities or hospitals have enrolled more than ten thousand subscribers:

Sacramento, California	10,000
Washington, D. C.	18,000
New Orleans, Louisiana	11,000
Minneapolis and St. Paul, Minnesota	14,000
New York City	72,000
Rochester, New York	24,000
Durham, North Carolina	10,500
Cleveland, Ohio	18,000
Baylor Hospital, Dallas, Texas	21,920

He notes as a good feature of group hospitalization that the physicians have been more successful in collecting fees from patients, since the hospital bills are paid from the central fund, the plans have not interfered with the freedom of physicians or patients in their selection of hospitals, some patients have in this way been able to receive hospital service which they could not otherwise afford.

There has been an insistent demand from

employed subscribers for the privilege of enrolling their dependents for hospital service. This has been met in several ways. One method entitles the subscriber automatically and without extra payment to discounts on hospital bills of all dependents. This is the case in New Orleans. Another method is the payment of a small additional sum which entitles the subscriber to a small discount on hospital bills of dependents. The Minnesota Hospital Service Association charges the subscriber one dollar per year and grants a twenty-five per cent discount to his dependents. The Baylor University Hospital charges an additional dollar per month, in exchange for which the subscribers' dependents receive benefits which are equal to approximately seventy-five per cent discount on hospital bills. In Rochester, New York, subscribers may enroll one or more dependents for fifty per cent discount on hospital bills. One dependent is enrolled at half the cost of a subscriber, and two or more dependents may be enrolled at a rate equal to the charge of the employed person. New York City dependents may be enrolled for the same privileges and at the same rates as employed persons.

Experience based on something more than ten thousand admissions and one hundred thousand patient days of care shows that hospital service subscribers use the hospital more freely than the general community, from ten to twelve per cent of subscribers are hospitalized in a year as compared to seven to eight per cent in a general community.

STILL TWINNING ALONG

The 1936 American Physical Education honorary award for achievement has been divided between twin brothers. At the first general session of the convention of the Eastern district of that association at Syracuse on March 22, the awards were presented to Drs. Edgar and Edwin Fauver.

The twins are athletic directors, physical

education department heads and college physicians, Dr. Edgar at Wesleyan University and Dr. Edwin at Rochester University.

The Fauvers were football and baseball players at Oberlin College, from which they were graduated in 1899. Both are graduates of Columbia University Medical School.

"PETROSITIS"

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"Petrositis" is not new, although our knowledge of it extends over only a few years. In that time much labor has been expended on the study of the anatomy of the petrous pyramid, on its pathology and symptomatology when diseased, and above all upon the treatment of petrositis. As to the last, the pendulum is swinging between the ultra-conservative and the extremely radical. If the author were to classify his own status in this particular, he would enroll as a liberal-conservative.

Anatomical Considerations

Myerson¹ recently published the results of his anatomical studies of two hundred temporal bones. Of these eleven per cent had pneumatized petrous pyramids, while thirty-eight per cent of the mastoid processes were pneumatic. An interesting practical point noted by him is that a pneumatized petrous pyramid is wider than a nonpneumatized one, especially at the apex. He says the pyramid is rather quadrilateral in the pneumatized bone as compared with the triangular nonpneumatized bone. Hagens² examined fifty petrous bones and found that thirty-four per cent had pneumatic spaces in the apex. He found marrow in the apex in ninety-four per cent of these bones.

Myerson describes four important landmarks upon the anterior surface of the pyramid: an elevation, a depression, a second elevation, and a second depression. The first elevation is caused by the superior semicircular canal. The first depression is situated between this point and the external lip of the internal auditory meatus. The second elevation is made by the upper lip and the roof of the internal auditory meatus. The second depression is the petrous apex. These landmarks will be alluded to below.

Profant³ describes the distribution of the pneumatic cells of the petrous pyramid as following either of two routes, the antrum-tympanic or the hypotympanic. The cells of the antrum tympanic route extend from the antrum and epitympanic space, above the cochlea and

above and behind the superior semicircular canal, then behind, above, and in front of the internal auditory meatus, and finally to under the tegmen of the anterior surface of the tip. The hypotympanic route takes in the cells from the hypotympanic space below the cochlea, then below the internal meatus and finally to under the tegmen of the posterior surface of the tip.

Pathology

Most observers consider that inflammations of the petrous pyramid occur by extension of the process from the middle ear or mastoid to the pneumatic cells of the pyramid and that the overpneumatized variety of mastoid is particularly liable to have extensions of cells in the pyramid. Profant quotes Ballance⁴:

The too-exclusive use of the term "mastoid cells" has possibly, to some extent, obscured the importance of other parts of the complex network of intercommunicating air spaces which surround the tympanum. The mucous membrane lining the whole of the complex space is a direct extension of that of the tympanum. The air cells are in no way prevented by the sutures from extending, more or less widely and in continuity, from one bone to the neighboring bone.

On the other hand, Eagleton⁵ thinks that there are seldom pneumatic air spaces in the petrous pyramid. He considers that there are generally bone marrow spaces present and that when the pyramid is diseased the process is osteomyelitis. He says that this is the reason why a small opening into the diseased apex and drainage are sufficient to bring about a cure. He likens this to the action of the orthopedic surgeon in osteomyelitis in children, where an incision is made in the periosteum and the osteomyelitis takes care of itself. J. Gordon Wilson⁶ too thinks that there are generally present in the petrosa diploetic spaces containing marrow and that pneumatic cells are rare. Kopetzky⁷ considers that

*Read at a meeting of the Eastern New York Eye, Ear, Nose, and Throat Society,
Troy, January 17, 1935*

the condition generally present in disease of the petrous pyramid is an osteitis in pneumatized bone, and that osteomyelitis occurs in diploic bone, with its cancellous tissue, often containing bone marrow.

In the acute cases of petrositis which do not drain themselves after myringotomy or a mastoidectomy, the pus may perforate the tegmen of the pyramid and cause an extradural abscess. Sometimes, particularly in infants, a retropharyngeal abscess is formed. In older patients a lateral pharyngeal abscess may be the result. If the pus does not remain discrete, it may cause a generalized meningitis.

In cases where the pus from the diseased pyramid discharges through a fistulous tract into the tympanum, and where this drainage is sufficient to prevent a damming back of pus in the pyramid, the patient will have a chronic discharging ear.

Symptomatology

The main symptoms and an account of their causation is as follows:

Pain. The character of the pain is distinctive. It is usually behind the eye on the side of the infection, sometimes above the eye or in the temple. An early symptom, it grows worse at night. Often severe in character, this pain causes the patient to cry out in agony. In one case the patient, a boy of twelve, rolled on the floor because of the severity of his ocular pain.

The cause of this referred pain is generally ascribed to irritation of the ophthalmic branch of the fifth nerve. This branch is adherent to the dura, much more so than are the second and third divisions of the trifacial. It is thought by Eagleton that this lack of mobility of the ophthalmic branch creates tension when there is any change in the position of the Gasserian ganglion. He thinks that a pull on the ophthalmic branch is the cause of the ocular pain. The less adherent branches are necessarily not as susceptible.

It is Vail's⁸ opinion that the ocular and orbital pain in petrositis is not due to irritation of the ophthalmic division of the fifth nerve. He calls attention to the great superficial petrosal nerve which arises from the geniculate ganglion of the facial nerve, emerges from a canal on the anterior surface of the petrous bone and passes forward towards the apex to the internal carotid artery. It joins the great deep petrosal nerve there to form the Vidian nerve. The great superficial petrosal lies on the petrous

bone below the dura, whereas the Gasserian ganglion is further away from the bone, being separated from it by some connective tissue and the dura. The Vidian nerve helps to form the sphenopalatine ganglion from which fibers are distributed to the orbit. Most of the sensory fibers in the Vidian nerve come from the great superficial petrosal nerve. Vail thinks that irritation of this nerve causes the referred ocular pain.

Discharge from the Ear. Ordinarily after a well-performed mastoidectomy the aural discharge ceases in seven to fourteen days. When it continues and is accompanied by ocular pain, it is distinctly a symptom of petrosal pyramid suppuration. The author has noticed in cases where the symptoms have been of long duration, that the pus is unusually thick in consistency. The discharge may be intermittent in character. In one patient the ear at times became almost dry, the ocular pain continuing, however, then suddenly a gush of pus appeared and the pain subsided.

Low Grade Fever. The temperature generally in petrositis shows an elevation of one or two degrees—99.5° or 100° in the morning, 101° in the evening.

Sixth Nerve Paralysis. Paralysis of the external rectus muscle with its consequent diplopia is not always seen in petrositis. For instance, in one of my cases where there was a large epidural abscess from a rupture through the pyramid, the patient at no time showed an involvement of the sixth nerve. Sixth nerve paralysis is not to be considered as a constant symptom of petrositis. This has been shown by many observers. When the abducens is involved in petrositis it is probably in its passage through Dorello's canal. Sears⁹ reported on the varying size of the diameter of this canal ascribing the paralysis as being more readily caused in a narrow canal when the swollen inflamed dura exerted its constricting influence. This swelling of the dura is caused by localized meningitis. There are many causes for sixth nerve paralysis. Perkins¹⁰ investigated ninety-five cases and gave the cause in thirty-three as follows: Sinus thrombosis two, meningitis three, labyrinthitis four, posterior fossa abscess nine, middle fossa abscess two, disease of petrous apex thirteen.

Kopetzky¹¹ thinks that paralysis of the external rectus in association with petrositis is the exception rather than the rule. He points out the danger caused by waiting for this symptom to appear before definitely diagnosing petrositis.

X-ray. Next to the symptoms so far enumerated, eye pain, persistent aural dis-

charge, and lowgrade sepsis, the x-ray gives the most valuable aid in diagnosing the condition in the petrous pyramid Coates¹² and his associates, synchronously with Kopetzky and Taylor, began making kev films in their ear inflammations at the onset, to have a record of the condition present in the pyramid early in the case and make comparisons by later roentgenograms if the symptoms suggested petrositis Lille¹³ makes an observation of practical value, that when well-developed air cells of the petrosa are present, their development will increase the usual distance between the walls of the petrous pyramid and the labyrinth

The Quiescent period Kopetzky¹⁴ describes and warns against what he calls the period of quiescence This is an interval of freedom from the deep-seated eye pain He draws an analogy by comparing this lull with the comparative painlessness of a subperiosteal abscess as contrasted with the pain of acute mastoiditis In a subperiosteal abscess, when pus breaks through the cortex, the tension and pain are relieved for a time, until the pus accumulates beneath the periosteum to an extent sufficient to press on the nerve endings In petrositis he sees a similar condition of temporary relief from pain obtaining between the first period of pain caused by the pull of the ophthalmic branch from the edematous dura until pus breaks through the apex and the time of re-accumulation of pus over the apex surface, when the nerve endings again are pressed upon

Report of Cases

Three cases where the symptoms of petrositis were so threatening as to demand further measures of relief, were operated on by the author Procedure consisted in removing the roof of the mastoid and of the tympanum, and elevating the temporosphenoidal lobe from the anterior surface of the pyramid Then an instrument was passed downward, forward, and inward, in the direction of the apex, hugging the pyramid surface In each of these cases the author opened into an abscess between the dura and the bone This was drained in the usual way

CASE 1 This case has been reported,¹⁵ but as the picture is fairly typical, it will be summarized briefly A boy of ten years of age had a secondary right-sided mastoid operation on March 22, 1930 Severe orbital pain and a slight amount of fever were present postoperatively Transitory diplopia was complained of ten days after the operation The orbital pain gradually

subsided, and he left the hospital fifteen days after his operation He was readmitted to the hospital five weeks later on account of intolerable eye pain He was operated on according to the described technique An epidural abscess was found and drained He went on to complete recovery

CASE 2 Here a similar procedure was followed and an abscess was discovered, The patient unfortunately died shortly after the operation, apparently from an embolus

CASE 3 Bernard B, aged twelve Right simple mastoid after scarlet fever six years previously Complete healing in six weeks

March 10, 1933 Mastoid cavity broke down and abscessed after acute purulent otitis Incision and drainage

March 25 Brought to hospital with these symptoms Violent headache, vomiting, restlessness, temperature 103, drowsiness There was considerable neck rigidity, positive Kernig, cerebrospinal fluid under increased pressure cloudy, 8,400 cells per 1 cm m no organisms

Diagnosis Protective meningitis The mastoid wound was revised, dura and sinus extensively exposed

March 27 The general condition was as before, symptoms somewhat relieved by lumbar puncture Cell count 3,200

March 29 Symptoms persistent and relieved only by lumbar or cisternal puncture

April 1 Complained of pain around right eye, paroxysmal and severe

April 4 Pain around right eye persistent and condition not improving Wound was reopened, radical mastoid operation Tegmen antri and tympani removed Blunt instrument inserted about 1½ inches along roof of petrous pyramid, in direction of apex, searching for epidural abscess, none found

April 6 Headache, vomiting, yawning drowsy, dilated right pupil, weakness upper and lower extremities left, left lower facial weakness, left abdominal reflexes diminished, left ankle clonus, left Babinski No hemianopsia, two diopters papillitis

Diagnosis Right temporosphenoidal abscess

Operation Right temporosphenoidal lobe aspirated through mastoid wound, from below upward About two-thirds ounce pus obtained Rubber catheter inserted and sewed in wound

April 12 Catheter replaced by Mosher drain

April 15 Since last operation the right frontal pain has been increasing in severity and in the number of paroxysms Patient apparently extremely ill (semicomatose condition), waking up occasionally to shriek with pain around his right eye

Operation Instrument again inserted along roof of pyramid, hugging the bone and, of course, beneath the dura. At a depth of about $1\frac{1}{2}$ inches, an abscess was entered and pus in large quantity, over two ounces, escaped. A rubber tube was inserted to drain this abscess.

April 27 Mosher drain removed and replaced by small rubber catheter.

May 3 Drain removed from brain, no further discharge.

May 6 The drain to epidural abscess had been pulled out about one-quarter inch each forty-eight hours, for the last three dressings, with a return of the symptoms of generalized headache, eye pain, occasional vomiting, and low fever. Drain of rubber catheter tubing reinserted under ether anesthesia, because of these symptoms. This drain was left *in situ* for ten days, then when the discharge from the epidural abscess lessened it was shortened each forty-eight hours until on May 24, when it was altogether withdrawn, and the patient was discharged free from symptoms.

Summary Recurrent mastoiditis. Protective meningitis, symptoms partially relieved by lumbar and cisternal punctures. Symptoms of petrous pyramid inflammation; unsuccessful exploration for epidural abscess. Right temporosphenoidal abscess, aspiration and drainage. Severe symptoms of petrous pyramid inflammation, re-exploration for epidural abscess, localizing it, and drainage. Complete recovery.

Considerations of Treatment

In each of these cases nothing was done to the petrous bone, the condition found was an extradural abscess which had accumulated from an erosion through the petrous pyramid. This procedure is sufficient where the pus has escaped from the pyramid and formed an abscess, but what shall be done in cases where the symptoms of retention of pus are increasingly urgent, where the pyramid cortex remains unbroken, and there can be found no fistulous tract leading into the pyramid from the mastoid cavity? The operation of Eagleton and Almour were devised to meet this condition.

Eagleton's¹⁶ method of unlocking the petrous pyramid consists of the removal of the posterior buttress (the tegmen celluli, sinus plate, bone of the sinodural angle and bone over Trautmann's triangle) and of the anterior buttress (root of the zygoma, part of the zygoma, part of the squamosa, and part of the anterior

canal wall), the removal of the entire tegmen and the elevation of the dura of the middle cranial fossa until the petrous apex is brought into view. A curved sharp hook is now used to enter the pyramidal tip.

The Kopetzky-Almour operation consists of the performance of a radical mastoidectomy as a preliminary step, unless a fistulous tract is found in the epitympanic space, which is searched before the radical operation steps are undertaken. Following the radical mastoidectomy, the tensor tympani having been removed, the tip is entered through the roof of the tympanic orifice of the Eustachian tube.

Myerson¹⁷ has taken advantage of the sequence of landmarks referred to, in planning a technic for uncapping the petrous apex by an approach through the middle fossa. He says

We place a gouge at a point slightly external to the beginning of the second depression and on the anterior surface as close to the superior border as possible. The direction is parallel to the superior border. In this way the carotid artery is kept far from the path of the gouge. A slight tap with the mallet or firm pressure with the hand and a downward motion of the handle will uncup a portion of the roof of the apex.

One of the advantages of this operation is that a radical mastoidectomy is unnecessary, and the subsequent loss of hearing is obviated.

Coates¹⁸ in a recent paper reported positive roentgenographic evidence of pathologic changes in the petrous pyramid in nine cases. Five of these patients showed the clinical picture of petrositis: the orbital pain, low-grade sepsis, and aural discharge. In one case a Kopetzky-Almour operation was performed, no pus was found. Seven of the remaining eight patients had mastoid operations performed, and the eighth had multiple myringotomies. In spite of the positive evidence of roentgenographic pathologic change in the apex in all of these cases, the clinical evidence of petrositis in five of them, and eight of these cases having no petrous pyramid surgery, each patient recovered completely. Coates says

We emphasize this because the difficult surgical procedures may not be necessary as often as we now imagine, especially when

the fear of a newly described condition wears off

This coincides with the author's opinion. A thorough mastoidectomy is all that is necessary for drainage in most cases. If there is any doubt about the completeness of the operation, a painstaking revision of the wound should be undertaken. An effort should be made to ascertain whether any fistulous tract is present, leading to the pyramid. If found, the tract should be enlarged and an effort made to drain the diseased apex through it. If the symptoms still continue, if they become increasingly urgent, particularly if there is any evidence of protective meningitis, one of the simpler operative methods is urged such as exposing and elevating the temporosphenoidal lobe from the anterior surface of the pyramid in search for an accumulation of pus near the petrous apex. If none is found the method of Myerson could be used to uncapped the pyramid.

Summary and Conclusions

Pneumatic air spaces were present in the petrous apex in eleven per cent of the bones examined by one observer, in thirty-four per cent by another.

When the apex is diseased the lesion in pneumatized bone is osteitis, in diploetic bone it is osteomyelitis.

The diagnostic criteria of petrositis are eye pain, low grade sepsis, and aural discharge.

Sixth nerve paralysis is occasional, not constant, in petrositis.

Reports of three cases of extradural abscess from petrous apex suppuration are submitted.

A thorough mastoidectomy will provide drainage for suppuration in the petrous apex in most cases. Exposure of the apex through the middle fossa and inspection for pus collections is not difficult. Uncapping the apex when it is sufficiently exposed can be done safely.

140 EAST 54 ST

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A COMMITTEE FOR THE STUDY OF SUICIDE

An organization to be known as the Committee for the Study of Suicide, Inc., was incorporated in December under the laws of the State of New York and began its activities early in January. The committee may in time increase its present membership of ten to a total number of twenty. The Board of Directors and the officers of the new corporation are:

Dr. Gerald R. Jameison, President, Mr. Marshall Field, Vice-President, Dr. Henry Alsop Riley, Treasurer, Dr. Gregory Zilboorg, Secretary and Director of Research, Miss Elisabeth G. Brockett, Dr. Franklin G. Ebaugh, Dr. Herman Nunberg, Dr. Dudley D. Shoenfeld, Dr. Bettina Warburg.

The committee plans a comprehensive study of suicide as a social and psychological phenomenon. To achieve this the following general outline was adopted:

- 1 *Intramural studies* of individuals inclined to suicide in selected hospitals for mental diseases
- 2 *Extramural studies* of ambulatory cases

afflicted with suicidal trends or with obsessional wishes for their own death.

3 *Social studies* of suicide. Various attempts at suicide will be followed up by experienced psychiatric social workers.

4 *Ethnological studies*, i.e., comprehensive investigation of suicide among primitive races, will be one of the first concerns of the committee, for suicide is a rather frequent occurrence among many primitive races still extant.

5 *Historical studies* of suicide will be pursued systematically.

The committee was organized under the guidance of its first chairman, the late Dr. Mortimer Williams Raynor, Medical Director of Bloomingdale Hospital, who died on October 5, 1935. Dr. Henry E. Sigerist, Professor of the History of Medicine at Johns Hopkins University, and Dr. Edward Sapir, Professor of Anthropology at Yale University, are consultant members of the committee. The Executive Offices are located at Room 1404, the Medical Arts Center, 57 West 57 St., New York City.

BETWEEN MENTAL HEALTH AND MENTAL DISEASE

B LIBER, M D, DR.PH, New York City

Editorial Note Under this title will appear short summaries of "transition cases" from the service of this author in the New York Polyclinic Medical School and Hospital The descriptions are not complete clinical studies, but will accentuate situations from the point of view of individual mental hygiene such as crop up in the every day practice of medicine

Fear of Cancer

A woman who used to be strong and healthy has lost twenty-five pounds in the last four months and has become weak She has fainting spells, is almost constantly dizzy, and is suffering from pains in various places She cries often and cries while telling her story The condition is much worse in the last two weeks, and she feels "her mind slipping away"

What has happened?

Four months ago her brother's wife, who was ailing for years, was taken to the hospital and a diagnosis of cancer was made Two weeks ago she died after an unsuccessful operation

To that an unfavorable personal event was added On the day of the sister-in-law's death, twelve days after the end of patient's last menstruation, she had a heavy metrorrhagia lasting one day This had never occurred before in her life and it alarmed her greatly Her trade union doctor examined her carefully and told her curtly and without further explanation something about a growth and something about cancer She says he declared her to be suffering from cancer of the womb and that an immediate operation was necessary He gave her a letter to a hospital, but refused to answer any of her questions She went away bewildered and despaired and began to act queerly

Her belief that she was suffering from cancer was strengthened by her loss of weight, which was really due to worry, insomnia, and lack of appetite

An examination showed, hanging out of the vagina a uterine polyp that was vulnerable and bleeding at the slightest touch, and she was again advised its removal But she

was asked before whether she was quite certain that her doctor had told her she had cancer Then, she remembered, he had really said that her condition, if not attended to, "might lead to cancer"

There was the trouble It seems that without informing himself about the patient's state of mind, without measuring his words, without an accent of kindness, he had performed his bare duty and had done the patient great harm He had told her a truth that under the circumstances took a different meaning and in the patient's mind had been changed into an untruth He had thrown something inflammable and dangerous into the patient's mental explosive The unfavorable ground was there, it needed only a precipitating factor to produce a mental illness

Patient had understood what she wanted to understand, that she had a cancer and now she was sure that she must suffer and die as her sister-in-law, whose agony she had witnessed

A long explanation was in place now She was told what a polyp and a cancer meant, how rarely a polyp will "change" into a cancer, how easy her operation will be and how this coincidence between her sister-in-law's illness and her entirely different growth was the cause of the misunderstanding She was told that cancer was not contagious and she must not necessarily have it because another member of the family has had it

This patient had her polyp removed the next day and, after a stay of three days in the hospital, she was and stayed cured of her physical as well as her mental trouble

Nascent Psychoneurosis

A man of letters and reader in a publishing house has had some acute respiratory sickness which he called "the grippe" As it lasted for several weeks it left him in a very weak state His doctor diagnosed anemia and had consultations with various specialists who studied the case and described their findings and results in long reports which were handed to the patient

Although he was much improved after a sojourn in the country, he began to believe himself incurable and "doomed," and observed himself with exaggerated accuracy

Soon he felt quite pleased in doing that, but thought he would be unable to work in the future

Fortunately the condition was not far gone

A frank talk clarified the situation He was told about the precipice he was facing and about the mental mechanism which usually led to the abyss The effect was favorable and rapid He bucked up and resumed his work, so this incipient case dissolved quickly

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EDITORIALS

A Notable Decision

Organized medicine has won a notable victory in Justice Shientag's decision in the test case of Szold vs Outlet Embroidery Supply Co, Inc. The latter firm, in its capacity as employer, had authorized the plaintiff to treat an injured worker but subsequently refused to pay his bill on the grounds that he was not a member of the approved medical panel set up under the amended compensation law. The complaining physician based his case on his license to practice medicine and the employer's specific authorization.

If the plaintiff had been upheld in his contention, some of the most important features of the 1935 compensation reforms would have been nullified. Free choice of physician would again be non-existent—in fact if not in theory—and professional responsibility for the medical aspects of the law would be reduced to a negligible role.

In view of the importance of this case to organized medicine, the Medical Society of the State of New York obtained permission from the Court to file a brief as *amicus curiae*. This was given due consideration in the liberal and scholarly decision handed down by Justice Shientag.

In his ruling Judge Shientag takes cognizance of the grave abuses which sprang from the failure of the old law to recognize the employee's right to choose his own physician. Abolition of this right would open the door "to a revival of the very abuses which the amended law was intended to cure, the cut-throat competition and commercialization of compensation medical practice, the improper 'lifting' of cases and the inadequate and inefficient treatment of injured workers."

Inasmuch as every licensed practitioner is eligible to qualify for the approved panel, "The requirement for authorization of physicians to treat compensation cases bears a reasonable relationship to the orderly and efficient administration of the remedial statute of which it is a part. It is in the interests of the physicians of the state as well."

The outcome of this important test case fortifies organized medicine in its efforts to raise the standards of compensation practice and keep this field open to all qualified practitioners. Only in this way can "employers and the community * * * receive the full benefits of the humanitarian law the costs of administering which they bear."

Hard Sledding Ahead

To physicians who have experienced the economic ordeal of the past seven years there is more than a little pathos in the extravagant wishes and fond hopes showered upon thousands of new medical graduates in the past month. Unless there is a radical change in the attitude of governmental and social welfare organizations toward medical economics, the courage and idealism of many of these young knights of the caduceus are destined to be sorely tried in the next few years.

The source of some of the difficulties which confront the newcomer in medicine extends back as far as his matriculation in medical college. Few of the schools limit registration to actual social needs. As a result the number of graduates each semester is out of proportion to the demand for professional service. Their subsequent distribution is also faulty so that competition is excessive in some localities while others go unsupplied.

Another fault which may be imputed to the medical colleges is their failure to ground students in the economic background of practice. It is a rare institution whose graduates carry away with them a genuine understanding either of general economic principles or of the special conditions underlying their profession.

There are many things which the older practitioner and society can do to help tyro on the steep road before him. Counsel, encouragement, and opportunity are graduation gifts which every established physician can offer his juniors in some measure. It is an obligation of government to see that economic justice is done these young doctors who have completed a difficult and costly training—that they are compensated for public service and protected against unfair competition from any source.

The latter are problems which the new graduate shares with his older confrères. At commencement, which is the culmination of his academic preparation, it is natural to appraise the medical college's

contribution to his professional career and note any deficiencies. Excellent as medical education in this country is in many respects, there are opportunities that the universities have yet to grasp,—opportunities that are also a duty, to both the student and the community.

Coup de Grâce

The wonders accomplished by dictatorship seem never to cease. With a stroke of the pen an overnight change occurs, presumably always for the better. We have often wondered how long it would be before the present government in Germany bent the science of medicine to its will.

Contained in a letter to the *Journal of the American Medical Association*¹ is an account of what the national fuerher of medicine is trying to accomplish. In the introductory remarks published in a book called the *Biologic-Medical Pocket Manual*, Dr. Wagner, *ipso jure*, states that the "New Medicine cannot be founded on science in the strict sense of the term but rather on the National Socialist weltanschauung as it effects the fundamental nature and biologic laws of all happenings" (*sic!*). Treatment with multiple irritant punctures, a procedure brought back from the dark ages, is recommended. The use of arsphenamine in syphilis is termed "provisional."

As a result of the preaching of this New German Nature Medicine, the use of serotherapy and vaccination has declined to an alarming extent. At the Rudolph Hess Hospital in Dresden gonorrhea and syphilis are being treated exclusively with "nature cures." For appendicitis, poultices, fasting, and purging are advised.

It is at least a consoling thought that some of the German profession are taking an open stand against the propagation of such dangerous and medieval practices. The pity of it is that their scientific advances of which the rest of

¹ *Nature Medicine and New German Medicine J.A.M.A.*, 106 2081, June 13 1936

the world has availed itself through many decades may soon be denied to the very nation whose brilliant physicians conceived them

year when the temperature literally drives people to the beaches and resorts where little protection from the sun is afforded

Ultraviolet Light and Skin Cancer

The therapeutic uses of the ultraviolet light seem now to have been established with a fair degree of certainty. Like every physical remedy which is apt to attract the fancy of the public, it has been exploited by manufacturers of ultraviolet ray appliances. Popular fancy has helped and the present fad for "sun-baths" is all the vogue. That this practice may not be entirely harmless is evident when one studies the observations of Roffo¹ in 5000 cases of cancer.

Except where a tumor developed in a scar or a nevus, cancer of the skin never appeared in any part of the body which was covered by clothing. Furthermore, of those presenting epitheliomas, 70.9 per cent were men. Roffo attributes the low incidence in women to the fact that they protect the exposed parts of the skin with ointments and powder. Most of the afflicted patients had extremely photosensitive skins, since no case of carcinoma of the skin was observed in the Negro race.

In experiments with white rats, Roffo was able to produce a malignant tumor in 70 per cent of the animals, by exposing them to the sun's rays for a long period of time. From his clinical observations and his research work, he concludes that the formation of an epithelioma is dependent upon the presence of a sensitizing photodynamic substance in the living cell which is subjected to the rays of the sun passing through the oxygen in the atmosphere.

This work reveals the danger of excessive exposure to the sun. It is not the luminous intensity which is the activating factor but the actinic concentration. Patients should be cautioned against over-exposure, particularly at this time of the

CURRENT COMMENT

"TODAY, MORE THAN EVER BEFORE, the doctor is concerned with the two major medical problems, those that affect himself as an individual physician and those that affect him in relationship to his public. These two general divisions of medical problems have always existed, but never before have they become such a matter of public concern as at the moment. Members of the profession are a little puzzled and, we might safely say, somewhat resentful, as to the reason for centralizing public scrutiny on the medical fraternity alone. The doctor, himself, would like to know whence all this and what it portends. Organized medicine is endeavoring in an open-minded, ethical manner, to learn what fault, if any, on the part of the profession has prompted such an intensive survey and scrutiny on the part of the political public. * * * Where, in its human relationships, has the profession erred to give cause for challenging its rights so to serve suffering humanity?"—*Southwestern Medicine*

"DURING THE BOOM, we Americans were borrowing an average of four books a year apiece from the public libraries. At the bottom of the depression, when we had (unfortunately) more time to read, and (fortunately) an awakened interest in the world around us, we were borrowing six books a year apiece. Now we're back to four and a half a year. A curious index of recovery."—So say the editors of *Today* in their issue of June 13.

"EACH YEAR COLLEGES are sending out bright, energetic young social workers, who have studied government and morals and economics, and are filled with the enthusiasm of youth and a desire to be of help. They look out on the world and see inequalities of life and many wrongs and injustices suffered by the poor, and become resolved to do what they can to correct those abuses. In accord with human behavior, the impulse is haste. The evil exists. It must be corrected at once, so a remedy is quickly found. Customs and systems of society must be changed. New laws and regulations must take the place of the old. Lacking sufficient experience with life, and not enough real

¹ Roffo A. H. *Lancet*, 1 472 Feb 29, 1936

knowledge of human behavior, they fail to see that many things they call wrong are not so when properly studied, and that new laws and regulations may cause worse conditions than those existing today.

Superficial thinking, without proper knowledge of facts, but with an urge for instant action without allowing for natural healing of time, constitutes a real danger. Such thoughts and impulses activating a good man, who knows that good is on his side, constitutes one of the most potential conditions for disaster one can imagine * * *

Political and economic questions have a direct effect upon medical practice. In the effort to protect and rehabilitate mankind, health is one of the first things thought about. To the superficial thinker health suggests disease and the relations between doctor and patient. Hence the well-meaning sociologist or reformer states as the first point of his program that everyone is entitled to the best medical service. They forget that the best service on a health program one can render another is to prevent him from getting sick. If this be so the first thought should be for proper housing. Everyone should have a good home which shall be cool in summer and warm in winter. Everyone should be well-clothed and shod to protect against exposure to the elements. Everyone should have plenty of food, such as sugar, eggs, milk, meats, fresh vegetables, and fruit juices. Everyone should have fresh air and sunshine and should spend a certain part of the day in open air exercise.

Such a program carried out on a universal scale would do more to prevent and cure disease than all the doctors in the country. Rich philanthropists do not think along those lines * * *. No matter what the motive, nor how much business, environment and personal relations influence their thoughts, their conclusions concerning medicine are formulated without proper knowledge and understanding."

The editors of the *Pierce County Medical Society Bulletin* (Tacoma, Washington) who are responsible for the foregoing, conclude their very timely article with

"This is not time for the doctor to sit idly by and let so-called reformers or politicians disturb his present personal relation with his patients * * *. The doctor should

be prepared to show that socialization of medicine will be of no real benefit to society. By advocating this change they are sowing the seed whose fruition will be general socialization of all."

"No WET NURSES NEED APPLY" is the title H. Sheridan Baketel, M.D. has given to his editorial in the June issue of *Medical Economics*. We quote from it in part: "Government encroachment, resented so strongly by business, is felt quite as keenly by the professions—especially medicine.

Those anxious to interfere with the present order make two charges: (1) that medical care costs too much under our present system of practice, and (2) that it is not always available to the great middle class on terms within their reach.

Repeated studies have proved the fallacy of the first complaint. Medical care costs less in the United States—is bound to cost less—than in countries where treatment of the ill is an obligation of the government. It often takes more people to administer such systems of compulsory health insurance and state medicine than it does to supply the actual medical care. Our alphabetical bureaucracies in Washington suffer from the same organic disorder. For everyone who actually performs some job there is an overseer to watch him (plus a man to oversee the overseer in all too many instances) * * *

The second complaint against private practice is partly justified. Medicine's chief problem today, in our opinion, is not to improve quality of its service, not to cut the cost, but to provide treatment to those in the middle class, who are neither paupers nor fortune-owners, on terms they can meet. This involves two things: scaling the fee according to the patient's means (his means to be determined by rigid investigation, not by guesswork), and arranging for payment of the fee on a regular installment basis in the many instances where it may be necessary * * *

Local medical groups have shown rare initiative in working out their difficulties. True, many efforts have failed, but, by a process of trial and error, others are being rewarded—without outside interference! * * * Medicine, like business, needs no wet nurse!"

Destruction of several types of highly malignant cancers in animals by injections of a diluted filtrate of the typhoid bacillus is reported in the current issue of *The American Journal of Cancer* by Dr. Mendel Jacobi of Beth-El Hospital, Brooklyn.

The work, it is emphasized, is still in the early animal experimentation stage, and much further research will have to be done before it can be determined whether the method can be used beneficially in the treatment of human cancer.

Correspondence

[THE JOURNAL reserves the right to print correspondence to its staff in whole or in part unless marked "private." All communications must carry the writer's full name and address which will be omitted on publication if desired. Anonymous letters will be disregarded.]

162 W. 56th St
New York

To the Editor

I am convinced that most civic-endowed hospitals are unaware that they have the opportunity to acquire valuable works of art to decorate their walls for just the cost of the materials employed.

They can be seen at any regional office of the WPA Federal Art Project (in New York at 6 East 39th St.) which, I understand, is not allowed to solicit, and I take pleasure in doing so personally. Aside from the esthetic and cultural value of these works, the morale of patients, doctors and nurses should be considerably enhanced by their acquisition, and one can readily imagine the therapeutic value of art in such institutions for the tuberculous and mentally defectives.

A large selection of etchings and lithographs can be had for seventy-five cents each (less for large quantities), paintings from \$3.50 to \$7.50 depending on size of canvas and frame, water colors, sculpture

and even murals at a proportionate rate. The Project will assign its artists to paint or model from life any of the medical staff the hospital desires.

It seems unfortunate that these art works should be allowed to accumulate—"born to blush unseen"—when life could be made ever so much more beautiful by their general distribution to the public buildings for which they were made. Any one can pay for them, of course, providing they are assigned to the hospital, and they can be distributed in any part of the hospital or doctors' and nurses' quarters.

I shall be glad to offer my advice to any hospital representative of the metropolitan area, if he so desires, as to the selection of these works of which there is a large variety.

Fraternally,

B F MORROW, M D

(Associate Editor PRINTS magazine Author Art of Aquatint, Fine Prints of the Year 1935 etc.)

May 19, 1936

Society Activities

Workmen's Compensation

Supreme Court Sustains the Workmen's Compensation Law

LORENZ J. BROSNAN, ESQ.

Szold v. Outlet Embroidery Supply Co., Inc.

Under the 1935 amendments to the Workmen's Compensation Law the rendering of medical care by physicians to compensation patients is restricted to physicians authorized by the Industrial Commissioner to render compensation medical care. The Act specifically provides machinery for the authorization of physicians to render such medical care and delegates to the medical societies of the State an important part in the licensing of such physicians.

The amended Act further provides that fees for medical services to compensation patients are payable only to physicians who have obtained authorization from the Industrial Commissioner to care for compensation patients.

In the case of Szold v. Outlet Embroidery Supply Company, Inc., the validity of

these provisions of the law was challenged. The complaint in that case was a physician who had treated an injured employee who was entitled to medical care under the Workmen's Compensation Law. The patient's employer specifically authorized the doctor to render the treatment in question although the doctor was not authorized to render medical care under the Act.

The doctor brought an action in the Supreme Court to enforce the payment of his bill and in his complaint while he alleged a contractual relationship with the employer he failed to allege that he was a physician duly authorized to render medical care under the Workmen's Compensation Act as amended in 1935.

A motion was made on behalf of the defendant at Special Term, Part III of the

Supreme Court, New York County, before Mr Justice Shientag for the purpose of testing out the sufficiency of the complaint.

The Court granted the motion and dismissed the complaint, thereby sustaining the validity of the amendments to the Workmen's Compensation Law which were involved and handed down a well-written opinion. In the opinion the Court made specific mention of the part which organized medicine had taken in securing the adoption of the amendments in question, saying in part

Protests came from various sources directed against abuses that had grown up involving the medical care of injured workmen, and from time to time changes in the law were suggested. Two governors of the state, recognizing the need for action, appointed committees to study the problem and to report with their recommendations. The present governor appointed a joint committee of the Medical Society of the State of New York and the Academy of Medicine. A careful scientific study was made and many changes were proposed in the existing law. The report was made the subject of a special message to the Legislature. The Legislature responded and passed a number of amendments to the Workmen's Compensation Law which are of vital importance so far as that law relates to the medical care of injured employees. For the first time organized medicine, as represented by the various county medical societies and by the Medical Society of the State of New York, was given a definite part in the administration of the law.

In sustaining the defendant's motion and thereby ruling that the plaintiff was not under the law entitled to recover a fee for treating a compensation patient, the court said

There is no question but that under the Workmen's Compensation Law as it stood prior to the amendments enacted by the Legislature in 1935 the plaintiff's complaint would state a good cause of action against the defendant. While the old law provided for medical care and treatment of injured employees there was scant provision regulating the rendering of such treatment. The guiding principle was that the employer was to provide medical care, and he it was who in the ordinary case chose the physician. * * *

The purpose of the law as amended clearly is to restrict the treatment of all compensation patients to doctors who have been authorized by the Industrial Commissioner. Except in case of emergency, and where a patient is confined in a hospital, only an authorized physician may render medical care and obtain payment therefor. Neither of these exceptions is present in the case at bar.

Further analysis of the changes in the law makes clear the reasons for the specific enactments restricting compensation medical prac-

tice. Under section 13-a an injured employee is given the choice of the physician who is to treat him, with the limitation that the physician chosen by him must be one authorized by the Industrial Commissioner. This new provision granting free choice to the employee is a salutary step, since it was the absence of such right that gave rise to so many abuses under the old law. * * *

If the plaintiff in this action is entitled to prevail there can be no question but that the desirable benefits of the 1935 amendments to the Compensation Law will to a large extent be nullified. Any unauthorized physician would then be entitled to bargain with employers for the treatment of injured employees. Whenever the employee does not object, and in many cases through pressure from the employer or through ignorance of the law he will not object, such unauthorized physicians would be in a position to provide medical care for fees at variance with the prescribed schedules of minimum fees and without being subject to the disciplinary provisions of the amended statute. The door would then be open to a revival of the very abuses which the amended law was intended to cure, the cut-throat competition and commercialization of compensation medical practice, the improper "lifting" of cases and the inadequate and inefficient treatment of injured workers. * * *

The requirement here in question is reasonable and one within the power of the Legislature to make in the interest of the health and welfare of injured employees and in order that employers and the community may receive the full benefits of the humanitarian law the costs of administering which they bear. The requirement for authorization of physicians to treat compensation cases bears a reasonable relationship to the orderly and efficient administration of the remedial statute of which it is a part. It is in the interests of the physicians of the state as well. The large number of decent, reputable, competent physicians are fully protected. It is significant that the Medical Society of the State of New York, as *amicus curiae*, has submitted a most convincing brief in support of the position here taken. Courts should be slow to interfere in a field where the Legislature is competent to act. The Workmen's Compensation Law as a whole and in its component parts should be liberally construed with a view to the accomplishment of its humane purpose.

June 5, 1936

Dr David J Kaliski, Chairman
Workmen's Compensation Board

Dear Doctor Kaliski —

I am enclosing herewith copy of a memorandum sent to me by our Albany office calling attention to the fact that authorized physicians are omitting to indicate on their x-ray reports, medical bills, etc., the date of the accident.

This information in many instances is

necessary so that when such reports are received at any of the offices of the department, that we can readily locate our records, inasmuch as the filing of reports in the offices are filed according to the date of the accident until such time as a compensation claim is made up

It is therefore suggested that any future communications by you to the various

County Medical Societies throughout the State, contain the direction *that all documents, reports, etc., submitted by authorized physicians should contain the date of the injury*

Yours very truly,

HUGH J MURPHY
Compensation Medical Registrar

Committee on Legislation

Supplementary Bulletin

June 12, 1936

The thirty-day period allowed the Governor for signing bills after the adjournment of the Legislature has expired, and we are now prepared to give you a report on the final disposition of the bills that were left in his hands. There were nineteen in which we had a particular interest, and all of them received his signature. A brief statement of each bill and its chapter number follows.

Senate Int. 12—Buckley, amends the Judiciary Law by providing jury duty exemption only for lawyers, doctors, clergymen, firemen, policemen, U S soldiers and sailors and ships' officers, or an exempt volunteer fireman or member of National Guard or Naval Militia, pharmacist, embalmer or optometrist. Chapter 890

Senate Int. 17—Fearon, Assembly Int. 51—Parsons, for optional forms of county government to be known as the elective county executive form, appointive county executive form with full administrative powers, appointive county executive form with restrictive powers, board of district supervisors form, and board of supervisors form. Chapter 828

Senate Int. 1083—Schwartzwald, Assembly Int. 1356—Crews, appropriates \$100,000 for payment of expenses of Labor Department for prevention of silicosis and other dust diseases. Chapter 889

This money is appropriated to meet the expenses of administering the following amendment.

Senate Int. 1084—Schwartzwald, Workmen's Compensation and Labor Laws, for compensation for silicosis and certain injuries to the respiratory tract resulting from inhalation of harmful dust and for prevention of dust hazard in public works. Chapter 887

"The Industrial Commissioner and the Industrial Board are hereby required to add to the Industrial Code, as provided in sections twenty-eight and twenty-nine of the Labor Law, effective rules and regulations governing the installation, maintenance and effective

operation in all industries and operations wherein silica dust or other harmful dust hazard is present, of approved devices designed to eliminate such harmful dusts and to promulgate such other regulations as will effectively control the incidence of silicosis and similar diseases"

It further provides for expert consultants

The Industrial Commissioner shall appoint as expert consultants on dust diseases three licensed physicians in good professional standing, each of whom shall have had, at the time of his appointment, and immediately prior thereto, at least ten years of practice in the diagnosis, care and treatment of diseases of the pulmonary tract, along with the interpretation of x-ray films thereof. They shall be paid at a salary to be fixed by the Industrial Commissioner not to exceed seven thousand five hundred dollars per year. Each such position of consultant shall be in the exempt class of civil service"

It also provides that all contractors engaged on public works wherever a harmful dust hazard is created, shall install appliances or methods for the elimination of the harmful dust, or the contract shall be void.

Senate Int. 1316—Dunnigan, Assembly Int. 1613—Sherman, provides that the name of the State Tuberculosis Hospital located near Oneonta shall be the Homer Folks Tuberculosis Hospital. Chapter 753

Senate Int. 1356—Nunan, Assembly Int. 1680—Ostertag, adds new section to the Labor Law providing forty-eight hours shall constitute a legal week's work of six days, and eight hours a day's work, for employees in institutions under control of Health, Correction, Mental Hygiene, and Social Welfare Departments. Chapter 716

Senate Int. 1404—Schwartzwald, Assembly Int. 1690—Bush, amends the Public Health Law by defining wholesaler, as applied to narcotic drugs, to be person who supplies others than consumers with narcotic drugs or preparations containing narcotic drugs that he himself has not produced or prepared. Chapter 498

Senate Int. 1559—Schwartzwald, Assembly Int. 1999—Crews, amends the Work-

men's Compensation Law by permitting expenditures from vocational rehabilitation fund for five years commencing July 1, 1936, of sum not exceeding \$50,000 a year to make studies and disseminate information on subject of control and prevention of diseases caused by inhaling harmful dust Chapter 888

Senate Int 1569—Feld, Assembly Int 2128—Armstrong, amends the Education Law relative to the practice of podiatry Chapter 791

Senate Int 1589—Livingston, amends the Education Law by providing that tests of school children for hearing shall be made annually with audiometers or such other scientific devices as may meet the approval of the Education Commissioner, requiring the Commissioner to appoint a competent person to supervise such tests and to perform such other duties as may be assigned by state specialists for eyes and ears Chapter 855

Senate Int 1649—D T O'Brien, Assembly Int 2011—Rapp, amends the Vehicle and Traffic Law by requiring applicants for learners' permits to take a vision test or other examination to discover defective eyesight. Chapter 904

Senate Int 1695—Schwartzwald, Assembly Int 1998—Bush, amends Art. 6 of the Mental Hygiene Law relative to mental defectives and institutions therefor Chapter 563

This is a general revision of this section of the present law in which the phraseology is changed to accord better with the activities of the Department at the present time, and also to include provisions for the conduct and management of institutions that have been added to the Department since the previous law was written

Senate Int 1771—Livingston, Assembly Int. 2130—Keogh, adds new section to the Public Health Law, requiring immediate report to the local department of health by physician, nurse, parent or guardian in charge of any minor under six years who is totally deaf or whose hearing is impaired, for proper treatment by welfare or other agency of those unable to make such provision for themselves, and for giving information as to proper instruction Chapter 856

Senate Int. 1791—Esquirol, Assembly Int. 1871—Breitbart, amends the Domestic Relations Law for the making of blood-grouping tests by duly qualified physicians, of mother, her child, and defendant, to determine whether or not defendant can be excluded as being father of child, results to be received in evidence only where definite exclusion is established Chapter 604

Senate Int. 1855—Dunnagan, Assembly Int 2220—Wadsworth, for reorganizing State Department of Social Welfare and for transferring thereto the functions of the Temporary Emergency Relief Administration Chapter 873

Senate Int. 1947—Mandelbaum, amends the Civil Practice Act for production, under subpoena duces tecum, of records of any department or bureau of a municipal corporation showing entries or records or any other data relating to physical condition or treatment of a hospital patient Chapter 741

Senate Int 2038—Mandelbaum, Assembly Int. 2277—Holley, relative to records of births Chapter 854

Provides for recording births of children born out of wedlock without indicating their illegitimacy

Assembly Int 988—Miss Byrne, amends the Workmen's Compensation Law so as to provide that the position of intern in a prison, reformatory, insane asylum, or hospital maintained or operated by a municipality or other subdivision of the State, shall be included as one of the hazardous employments for which compensation shall be payable for injuries or death Chapter 711

Assembly Int 1842—Allen, appropriates \$10,000 for the Cornell State Veterinary College to study prevention and control of Bang's disease in bovine animals by vaccination and suppression of mastitis Chapter 847

In closing another legislative season may I, on behalf of the Committee that is retiring, express our appreciation of the very helpful assistance and cooperation we have had from the County Chairmen, and on behalf of the new committee, extend an invitation for continued cooperation

Remember our forecast that next year we are likely to have considerably more difficulty in preventing the enactment of some health insurance law than we have had in any previous year. Lay the groundwork now for the opposition which you will be expected to provide next Winter. We believe there are very few legislators who will approve of increasing the tax burden of the State to the extent that would be required by health insurance, if they are thoroughly familiar with the adequacy and availability of medical care which the State now provides. Naturally, there are some weaknesses in our present system, but they are relatively few, and both the Department of Health and the medical profession are engaged in their correction

Best wishes for a restful vacation

JOSEPH S. LAWRENCE
Executive Officer

Proceedings of the Executive Committee

Editorial note—It is desired to keep the membership up to date on the various decisions of the Executive Committee. Hereafter a narrative record will appear as soon as possible after each regular meeting of the Committee which occurs on the second Thursday of each month except in July and August.

When it first assembled on April 28, 1936, the Executive Committee inaugurated a policy of inviting to its regular monthly meetings the Chairmen of the six standing committees—Scientific Work, Legislation, Public Health and Medical Education, Economics, Public Relations, and Arrangements, and the five Trustees. It was hoped in this way to facilitate work, and all concerned have already found the custom helpful.

In addition to routine duties the Executive Committee has taken action in several matters.

It has given its approval to the setting up by the five Metropolitan County Societies—Bronx, Kings, Queens, Richmond and New York—of a combined Pneumonia Control Committee, formed for the purpose of reducing mortality from pneumonia in New York City. The campaign started last year by the State Society has thus taken in this large section of the population of the State. A representative of the State Society was designated, on request, to sit with this local pneumonia committee, and the services of the Public Relations Bureau were offered in an advisory capacity.

The Legislative Committee was asked to study the so-called Basic Science Law which is in force in several states, with references to its value for New York State.

It was arranged that where the many queries that come from members on medico-legal matters have general interest, the JOURNAL be prepared to publish answers from the Legal Counsel.

In response to a formal request from the State Department of Mental Hygiene for designation under the new law of a representative to serve on the new Board of Psychiatric Examiners, the Committee selected Dr. Israel Strauss of New York City. Dr. Strauss was instrumental in securing passage of this measure by the Legislature and has been duly appointed by the Commissioner.

It was decided to indicate in the Directory by suitable insignia the details of qualification of physicians in New York State under the Workmen's Compensation Law.

The Director of the Public Relations Bureau was requested to attend the meetings

of standing committees and of the Executive Committee.

The following resolution of the 1936 House of Delegates was ordered to be sent to the Governor and the Commissioners of State Departments concerned:

RESOLVED that the Medical Society of the State of New York condemns the practice of physicians on full time employment by the State, engaging in private practice for profit.

The Economics Committee was directed to act to give force to another resolution of the House which reads in part as follows:

to undertake immediate negotiations with the proper state agencies looking to the abolition of a state-wide schedule of reimbursable fees, and the adoption of a new policy by these agencies enabling and requiring the payment of local welfare officers of medical fees that are in accordance with the prevailing minimum fees in their localities, as determined in each locality by conference between the local welfare officers and the county medical society.

The Committee on Public Health and Medical Education was instructed to form a subcommittee on cancer for the State.

Because frequently there is an interval of months between application for membership and election, it was thought wise to adopt the following resolution:

That a temporary binder be issued to any applicant for membership in the Medical Society of the State of New York as soon as the Secretary of the County Society advises the Secretary of the State Society that his application for membership, together with his check for dues has been received and placed on file with the County Society, provided that when the applicant is finally elected the binder is to be closed by the issuance of a certificate of insurance dated as of the date of issue of the binder, provided that if the applicant fails of election the binder will be cancelled as of the date of the issuance of the application, and the applicant would enjoy no protection thereunder.

The personnel of the standing and special committees has been fully chosen, as shown in the lists attached.

The following budget was adopted and later approved by the trustees.

Budget—July 1, 1936 to June 30, 1937

	<i>Appropriation</i>
Rent	\$2,600 00
Telephone	200 00
Postage	500 00
Stationery and Printing	1,000 00
Salaries	15,000 00
(When Miss Baldwin retires under title of Emeritus Office Manager with salary on annual basis of \$3,000 from date of retirement, it will replace the appropriation of \$4,000 in the above.)	
Contingent Fund	1,500 00
Annual Meeting—Printing, Postage and Stenographer for House of Delegates	2,500 00
Printing District Branch Programs, and postage for mailing paid through Secretary's Office.	800 00
Auditor	500 00
Traveling Expenses—General—including President and Secretary	4,500 00
Traveling Expenses, A M A Delegates	500 00
Counsel—Salary	12,000 00
Counsel—Expenses	500 00
Secretary—Emeritus	3,000 00
Secretary—Salary	3,600 00
Secretary—Expenses	500 00
Executive Officer's Salary	9,000 00
Executive Officer's Expenses	1,100 00

Standing Committees

Legislation	7,000 00
Economics	6,000 00
Public Health and Medical Education	7,000 00
Public Relations	2,500 00
Scientific Work	1,000 00

Special Committees

Medical Research	250 00
Trends in Medical Practice—General	500 00
Public Relations Bureau	19,800 00
Workmen's Compensation Procedure	1,950 00
Honorarium for past services Dr Kaliski	1,000 00
Honorarium for past services Dr Elliott	1,000 00
Salary Dr Kaliski, Executive Director Workmen's Compensation Committee	5,000 00

District Branches

For Annual Meeting as allowed under the By-Laws	1,600 00
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Special Appropriations

Conference of County Secretaries	600 00
Conference Executive Committees District Branches	250 00
Christmas Bonus (Includes Legislative Bureau and Committee on Trends)	550 00

Journal

Thomas R. Gardiner—Printing, Publication, etc.—\$50 per member approximately	7,500 00
Journal Management Committee—\$50 per member approximately	7,500 00

Directory

Thomas R. Gardiner—Printing, \$43 per member approximately Plus the delivery charges which shall be based on the average charge for the years 1932, 1933 and 1934	1,698 00
Salaries	4,000 00
Additional expenses, including corrections, postage, stationery, printing, and sundry expenses	2,500 00

*Standing Committees**Legislation*

Homer L. Nelms, <i>Chairman</i>	Albany
James L. Gallagher	Buffalo
B. Wallace Hamilton	New York
John J. Masterson	Brooklyn
Leo F. Simpson	Rochester

Scientific Work

William A. Groat, <i>Chairman</i>	Syracuse
Charles D. Post	Syracuse
Thomas M. Brennan	Brooklyn
Nelson B. Sackett	New York
Lloyd H. Ziegler	Albany
Frank J. Williams	Albany
Albert R. McFarland	Rochester
Walter S. Atkinson	Watertown
Thomas P. Farmer	Syracuse
Fedor L. Senger	Brooklyn
James M. Flynn	Rochester
Cassius H. Watson	New York
Clarence V. Costello	Rochester

Public Health and Medical Education

Thomas P. Farmer, <i>Chairman</i>	Syracuse
Leo F. Schiff	Plattsburg
Russell LaF. Cecil	New York
Martin B. Tinker	Ithaca
Edward G. Whipple	Rochester
Clayton W. Greene	Buffalo
Oliver W. H. Mitchell	Syracuse
James K. Quigley	Rochester
Edward J. Wynkoop	Syracuse

Public Relations

Augustus J. Hambrook, <i>Chairman</i>	Troy
William H. Ross	Brentwood
Herbert H. Bauckus	Buffalo
Arthur F. Heyl	New Rochelle
Edward T. Wentworth	Rochester
Frederic W. Holcomb	Kingston
Thomas H. Cunningham	Glens Falls

Economics

Frederic E. Elliott, <i>Chairman</i>	Brooklyn
Frederick S. Wetherell	Syracuse
Joseph P. Garen	Olean
Alfred E. Shipley	Brooklyn
Joseph C. O. Gorman	Buffalo
Cassius H. Watson	New York
Frederick M. Miller	Utica
George C. Vogt	Binghamton
Chester O. Davison	Poughkeepsie
Walter W. Mott	White Plains
Morris Maslon	Glens Falls
Warren Wooden	Rochester

Arrangements

Leo F. Simpson, <i>Chairman</i>	Rochester
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Special Committees

On Revision of Constitution and By-Laws

Oliver W. H. Mitchell, <i>Chairman</i>	Syracuse
Thomas H. Cunningham	Glen Falls
Charles H. Goodrich	Brooklyn
Walter W. Mott	White Plains
Joseph C. O'Gorman	Buffalo

Trends in Medical Practice

Terry M. Townsend, <i>Chairman</i>	New York
Augustus J. Hambrook	Troy
William A. Groat	Syracuse
Homer L. Nelms	Albany
Thomas P. Farmer	Syracuse
Frederic E. Elliott	Brooklyn
Leo F. Simpson	Rochester
Samuel J. Kopetzky	New York
David B. Jewett	Rochester
George W. Kosmak	New York

Journal Management

George W. Kosmak, <i>Chairman</i>	New York
Thomas M. Brennan	Brooklyn
William A. Groat	Syracuse
Samuel J. Kopetzky	New York
Peter Irving	New York
Nathan P. Sears	Syracuse

Medical Research

John J. Morton, Jr., <i>Chairman</i>	Rochester
John Wyckoff	New York
Joshua E. Sweet	New York
Allen O. Whipple	New York
Simon Flexner	New York
Augustus B. Wadsworth	Albany
Edwin MacD. Stanton	Schenectady
Herman G. Weiskotten	Syracuse
Winfield W. Scott	Rochester
Burton T. Simpson	Buffalo
Peyton Rous	New York
George J. Heuer	New York
Marshall Clinton	Buffalo

Workmen's Compensation Procedure

David J. Kaliski, <i>Chairman and Director</i>	New York
Frederic E. Elliott	Brooklyn
B. Wallace Hamilton	New York

Prize Essays

James Alexander Miller, <i>Chairman</i>	New York
Edward G. Whipple	Rochester
Burton T. Simpson	Buffalo

To Confer with Saratoga Springs Commission

John Wyckoff, <i>Chairman</i>	New York
George S. Towne	Saratoga Springs
Alfred W. Armstrong	Canandaigua

On Malpractice Defense and Indemnity Insurance

James M. Flynn, <i>Chairman</i>	Rochester
Chas. Gordon Heyd	New York
Milton J. Goodfriend	Bronx

World's Fair

James R. Reuling, Jr., <i>Chairman</i>	Bayside
Thomas A. McGoldrick	Brooklyn
Joseph P. Henry	Rochester

Advisory Committee to Woman's Auxiliary

H. P. Mencken, <i>Chairman</i>	Flushing
Frederic C. Conway	Albany
John L. Bauer	Brooklyn
William H. Ross	Brentwood
Herman W. Galster	Scotia

Abraham Jacobi Committee

H. L. K. Shaw, <i>Chairman</i>	Albany
Chas. Gordon Heyd	New York
J. Richard Kevin	Brooklyn
Grant C. Madill	Ogdensburg

On By-Laws

Peter Irving, <i>Chairman</i>	New York
Samuel J. Kopetzky	New York
Lorenz J. Brosnan	New York

Censors

Floyd S. Winslow	Rochester
Peter Irving	New York
Terry M. Townsend	New York
Carl Boettiger	Flushing
Bertram W. Gifford	Saugerties
John P. J. Cummins	Ticonderoga
Murray M. Gardner	Watertown
Leo P. Larkin	Ithaca
Thomas W. Maloney	Geneva
Henry W. Ingham	Jamestown

Executive Committee

Floyd S. Winslow, <i>Chairman</i>	Rochester
Charles H. Goodrich, <i>Vice Chairman</i>	Brooklyn
Frederic E. Sondern, <i>Ex President</i>	New York
Peter Irving, <i>Secretary</i>	New York
George W. Kosmak, <i>Treasurer</i>	New York
Samuel J. Kopetzky, <i>Speaker</i>	New York
James M. Flynn	Rochester
Thomas W. Maloney	Geneva
John P. J. Cummins	Ticonderoga
Henry W. Ingham	Jamestown

Economics

PREFACE TO NEW MANUAL OF MEDICAL CARE

Suitable for insertion in new manual

April 14, 1936

To COMMISSIONERS OF PUBLIC WELFARE
CHAIRMAN OF ERB

From FREDERICK I. DANIELS

A copy of the revised Manual of Medical Care, effective April 1st, 1936, has been forwarded to you. Your attention is directed, by page reference, to certain features of the new manual.

1 *Title, Index* The manual may hereafter be referred to by the short title "Manual of Medical Care." A complete index has been added for easy page reference (see pages 51-56)

Distribution of synopsis, covering only services reimbursable in your district, is recommended. Because the medical relief program is restricted to supplementation of already existing facilities, the scope of the program varies from district to district. For a given district, only a portion of the services covered by the manual may apply. For this reason, many welfare districts have made excerpts covering only the services which are reimbursable for their respective districts, and have released such excerpts to participating professional personnel and authorizing officials, in preference to issuing the complete manual.

2 Medical Compensation Board may act as professional advisory committee The local Medical Compensation Board may be empowered locally to act as the professional advisory committee to the local relief organization (see page 10)

3 Equitable distribution of work to physicians It is one of the objectives of the medical relief program to provide an equitable distribution of work where medical care is given on a fee basis (see page 9) It is recommended for such districts that the local welfare official maintain an approved list of physicians or other professional attendants, who have filed with him the statement appearing at the head of page 13 of the manual A patient requesting medical care may be assigned the physician of his choice, but when a patient does not designate a physician or professional attendant by name, assignments should be made from the approved list alphabetically and in rotation (see page 12)

A limit may be imposed on income from relief work To spread the work equitably, a welfare officer may establish a monthly maximum (see page 12) (For example, in a populous upstate county, the limit established for physicians is \$150 00 per month, excluding obstetrics, if, prior to the end of the month a physician has earned \$150 00 by attending relief cases, he may desire to treat certain of his patients free of cost for the remainder of the month, otherwise, no further authorizations are issued to him, and subsequent requests are assigned in rotation to other physicians on the approved list.)

4 Optional procedure for control of number of visits Original authorization for one visit. The local welfare officer may limit the original order for medical care to one diagnostic visit, authorization for additional visits may be based on the diagnosis and the number requested by the attending physician (see page 14) It has been the experience of several welfare districts that available funds for medical care can be used to provide more adequate care for a greater number of clients when the above procedure is established

Number of subsequent visits based on diagnosis Set up in conjunction with local professional advisory committees, such a plan provides that the original authorization, limited to a single diagnostic visit, is issued as usual on form 277 Participating physicians are furnished with a supply of stamped, addressed, postcards (of a type which may be sealed to keep the information confidential) On completing the diagnostic visit, the physician records on the postcard the name of the patient, the case number and order number, the tentative diagnosis, and his estimate of the number

of visits subsequently needed, and mails the card to the authorizing official On receipt of the card, the local welfare officer or his medical supervisor may discuss the case with the physician if the number of visits does not appear to be justified by the diagnosis, and the estimated number of visits may be revised The physician's estimate (revised if necessary) is then posted on the copy of form 277 retained by the authorizing official—or, the postcard may be attached to the form

The physician's bill is presented in the usual manner, compared with the copy of the authorization and postcard on file, and, if necessary revised to come within the estimate on the postcard or file copy

5 Prior authorization not required for appliances costing \$7 00 or less Prior authorization is no longer required for the majority of prosthetic appliances, i.e., those costing \$7 00 or less For those appliances, including eyeglasses, which cost more than \$7 00, prior authorization, obtained from the Division of Medical Care on form 3486, is required as heretofore (see page 28)

Prior authorization required for certain services The established procedure is for the usual and ordinary services which comprise the greater part of medical care to be authorized locally without prior authorization In general, only those infrequent cases requiring expensive or prolonged care, and where an expenditure of more than \$20 00 is involved, require prior authorization, if reimbursement is contemplated Where either dental care (see page 25), or x-ray examinations (see page 20), or practical nurse-housekeeping care (see page 26), or chronic medical care (see page 15), amounts to more than \$20 00 for one person, prior authorization of expenditure in excess of \$20 00 is required

Certain infrequent special services entailing considerable expenditure require prior authorization irrespective of the usual \$20 00 limit, x-ray therapy (see page 20), laboratory examinations—categorical approval may be secured for certain types—(see page 22), physiotherapy treatments in excess of 5 (see page 22), expensive and prolonged medication (see page 36), and special professional services not described in the manual (see page 34)

6 Advice on appliances and eyeglasses Although prior authorization is no longer required for prosthetic appliances and eyeglasses costing \$7 00 or less, the Division of Medical Care will, on request, aid welfare districts in technical matters such as the reimbursable basis for various eyeglass lens classifications If this type of service is desired, it will be necessary only to state the specifications for the appliance or lenses—form 3486 need not be used

7 *Application of State Education Law to needy school children* Under Article 20-A, Section 577-b, subdivision (3-a), of the State Education Law, a school hygiene district may, where a school medical inspection has revealed physical disability, provide necessary treatment for school children whose parents are unable to do so (see page 50)

8 *Boarding care* Board, lodging, and care given to a home relief case may be reimbursable as food and shelter, but such care is not eligible for reimbursement as bedside nursing care (see page 36)

Hospital and institutional care not reimbursable. Hospital and institutional care is specifically excluded from home relief by the Emergency Relief Act. (See page 42) The burden of proof that a boarding case does not properly belong in a hospital or institution is that of the local welfare district. Patients for whom hospital or institutional care may be imperative should not be maintained in boarding or nursing homes

Any establishment licensed, or required to be licensed under the State Charities Law is considered to be an institution and care therein is not reimbursable by the Administration Your attention is directed especially to the following, which are not reimbursable when provided elsewhere than in the patient's home: maternity care, care of the tuberculous, care of children under the age of sixteen years, other types of care customarily provided in hospitals or institutions

Eligibility for reimbursement, reimbursable charges It is suggested that the written opinion of the Social Service Division of the Administration, as to the reimbursability and the basis therefor, be obtained prior to, or as soon after as possible, authorizing such care. Where a case presenting medical conditions is cared for in a boarding home the attending physician's written recommendation as to the desirability of such care should be submitted also

9 *Corrections*, Eyeglass schedule, page 39 The column under "single vision" which is now headed +C- is corrected to read +C+ The footnote (*) to the schedule is corrected to read "*Bausch and Lomb or American Optical Company standards, or their equivalent, and of U S A manufacture."

10 *Veneral disease treatment—cooperative policy* In cooperation with the New York State Department of Health in its campaign against venereal disease, the following policy (see page 27) has been established in regard to venereal disease treatment, which is now a dual responsibility under the Public Health and Public Welfare Laws

Not reimbursable in cities and county health districts In all cities (including those cities which are not public welfare districts), and in those counties having a county health department (Cattaraugus, Columbia, Cortland, Suffolk, Westchester) venereal disease treatment of those unable to pay for such treatment by a private physician is the responsibility of the local board of health under section 343-p of the Public Health Law Such treatment does not constitute a basis for reimbursement by the Administration

Reimbursable except in cities and county health districts Except in cities and county health districts, treatments for relief recipients may be authorized under section 83 of the Public Welfare Law and shall be eligible for reimbursement by the Administration on the basis of regular office visits Specific drugs for the treatment of syphilis may be obtained, free of cost, from the State Department of Health

Cooperation of health and relief officials, existing facilities to be utilized In authorizing treatment, the relief official should cooperate fully with the local health officer in the conduct of his syphilis control program Already existing local facilities, such as clinics which are supported in whole or in part by local and/or State funds, shall continue in undiminished volume their services to relief and non-relief cases who are unable to pay for such treatment However, treatments given in clinics do not constitute a basis for reimbursement by the Administration

11 *Laboratory examination of sputum for pneumonia* One of the most important factors in the state-wide campaign being waged to reduce deaths from pneumonia is quick, accurate, examination of sputum In many cities and counties this service may be obtained, without additional cost to the relief or welfare department, from state-approved laboratories maintained by, or paid on a contract basis from, public funds

Sputum typing reimbursable in certain districts In public welfare districts not having established laboratory service provided from public funds, necessary diagnostic laboratory examinations may be reimbursable upon prior authorization by the Administration (see page 22) Rather than obtaining prior authorization for individual examinations, categorical authorization may be obtained for certain types of examinations, such as sputum typing for pneumonia The Division of Medical Care will be glad to advise you promptly as to whether or not sputum typing is a reimbursable service in your district, and as to the name and address of the nearest approved laboratory Where such examinations are reimbursable,

2 Medical Compensation Board may act as professional advisory committee The local Medical Compensation Board may be empowered locally to act as the professional advisory committee to the local relief organization (see page 10)

3 Equitable distribution of work to physicians It is one of the objectives of the medical relief program to provide an equitable distribution of work where medical care is given on a fee basis (see page 9). It is recommended for such districts that the local welfare official maintain an approved list of physicians or other professional attendants, who have filed with him the statement appearing at the head of page 13 of the manual. A patient requesting medical care may be assigned the physician of his choice, but when a patient does not designate a physician or professional attendant by name, assignments should be made from the approved list alphabetically and in rotation (see page 12).

A limit may be imposed on income from relief work. To spread the work equitably, a welfare officer may establish a monthly maximum (see page 12). (For example, in a populous upstate county, the limit established for physicians is \$150.00 per month, excluding obstetrics, if, prior to the end of the month a physician has earned \$150.00 by attending relief cases, he may desire to treat certain of his patients free of cost for the remainder of the month, otherwise, no further authorizations are issued to him, and subsequent requests are assigned in rotation to other physicians on the approved list.)

4 Optional procedure for control of number of visits Original authorization for one visit. The local welfare officer may limit the original order for medical care to one diagnostic visit, authorization for additional visits may be based on the diagnosis and the number requested by the attending physician (see page 14). It has been the experience of several welfare districts that available funds for medical care can be used to provide more adequate care for a greater number of clients when the above procedure is established.

Number of subsequent visits based on diagnosis. Set up in conjunction with local professional advisory committees, such a plan provides that the original authorization, limited to a single diagnostic visit, is issued as usual on form 277. Participating physicians are furnished with a supply of stamped, addressed, postcards (of a type which may be sealed to keep the information confidential). On completing the diagnostic visit, the physician records on the postcard the name of the patient, the case number and order number, the tentative diagnosis, and his estimate of the number

of visits subsequently needed, and mails the card to the authorizing official. On receipt of the card, the local welfare officer or his medical supervisor may discuss the case with the physician if the number of visits does not appear to be justified by the diagnosis, and the estimated number of visits may be revised. The physician's estimate (revised if necessary) is then posted on the copy of form 277 retained by the authorizing official—or, the postcard may be attached to the form.

The physician's bill is presented in the usual manner, compared with the copy of the authorization and postcard on file, and, if necessary revised to come within the estimate on the postcard or file copy.

5 Prior authorization not required for appliances costing \$7.00 or less Prior authorization is no longer required for the majority of prosthetic appliances, i.e., those costing \$7.00 or less. For those appliances, including eyeglasses, which cost more than \$7.00, prior authorization, obtained from the Division of Medical Care on form 3486, is required as heretofore (see page 28).

Prior authorization required for certain services. The established procedure is for the usual and ordinary services which comprise the greater part of medical care to be authorized locally without prior authorization. In general, only those infrequent cases requiring expensive or prolonged care, and where an expenditure of more than \$20.00 is involved, require prior authorization, if reimbursement is contemplated. Where either dental care (see page 25), or x-ray examinations (see page 20), or practical nurse-housekeeping care (see page 26), or chronic medical care (see page 15), amounts to more than \$20.00 for one person, prior authorization of expenditure in excess of \$20.00 is required.

Certain infrequent special services entailing considerable expenditure require prior authorization irrespective of the usual \$20.00 limit, x-ray therapy (see page 20), laboratory examinations—categorical approval may be secured for certain types—(see page 22), physiotherapy treatments in excess of 5 (see page 22), expensive and prolonged medication (see page 36), and special professional services not described in the manual (see page 34).

6 Advice on appliances and eyeglasses Although prior authorization is no longer required for prosthetic appliances and eyeglasses costing \$7.00 or less, the Division of Medical Care will, on request, aid welfare districts in technical matters such as the reimbursable basis for various eyeglass lens classifications. If this type of service is desired, it will be necessary only to state the specifications for the appliance or lenses—form 3486 need not be used.

experts to study the problem. They were men who had both the respect and the confidence of their colleagues in the profession. They certainly had no bias or any desire to paint the picture blacker than it was. After having spent a great deal of time and money studying the records of individual fatalities in the most thorough way, they could not avoid the conclusion that two-thirds of the tragedies could have been prevented if the women had benefited from the knowledge and services which were available in our city. The chief difficulty was the lack of skill and the poor judgment of many of the physicians who cared for these unfortunate patients. Many of them attempted to handle difficulties for which they were not prepared. Others were often tempted to save time by hastening the birth through unnecessary instrumental interference and through other dangerous short-cuts.

The report certainly received plenty of publicity. Public interest was aroused not only here but throughout the country. I do not know how many meetings were called for the more thorough discussion of this report and its implications. Much debate and recrimination followed. So far as I know, no one has ever been able to disprove the conclusions presented in this masterful document notwithstanding the criticism and resentment which it aroused from special groups. It stands today as authentic and as overwhelming in its indictment as it was on the day of its publication. And yet I must repeat that last year the figures for maternal deaths in the City of New York showed practically the same rate as before. The many resolutions, the expressed interest of our official health and hospital departments, the many vows which the medical profession must have taken during those difficult months of reporting and debating have all availed nothing so far as I can see in the actual rates.

I hope that this meeting is not just one more in the series that have already been held. I cannot believe that it is your wish to go through another public exercise to mourn our losses, to rehearse our ineptitude and our futility in wiping out the blot of more than 450 unnecessary maternal deaths last year in New York City and the 10,000 that might have been prevented in the whole country. The time has come when something very constructive must be done. If it can be done anywhere in the United States it should be possible to do it right here in our city where we have a wealth of medical skill and facilities, and hundreds of welfare agencies only too eager and able to help.

The time has come for a final showdown. Do we really want these deaths to continue, or are we ready to put a halt to them? It is needless for me to argue that many of these deaths can be prevented. We all know that they can. Not only have we the authority of the report of the Academy of Medicine for this statement, but the corroborative evidence of similar investigations made elsewhere since then, both by the Federal Children's Bureau and by other medical groups. What is even more conclusive in my judgment is the very real experience of a half-dozen demonstrations. One page of accomplishment is worth ten pages of reporting and analysis of our mistakes. The Maternity Center Association years ago demonstrated in a limited district in this very city of New York that it was entirely possible to so supervise the pregnancies and confinements of poor women as to reduce the maternal mortality to the figure of two deaths instead of six per thousand. The Association thus anticipated by its achievement the later findings of the Academy on the possibilities of mortality prevention. Hospitals here and there throughout the country with well-organized and controlled maternity services have achieved similar records.

There is no miracle attached to the operations of either the Maternity Center Association or of these hospitals. If it is argued that these are limited and special services which it would be difficult to duplicate in large cities or over large areas, we need only to point out that their experience has been repeated year in and year out, and that in certain European countries, such as Sweden, Denmark, and Holland, the whole population is taken care of with this same minimum of maternal risk. What has been shown to be possible in special groups in our country and in certain nations of Europe can be done uniformly and universally. It certainly can be done here. We must only make up our mind to do it and to set up the needed machinery for doing it.

The Health Department of the City of New York now maintains thirty-six prenatal clinics in the baby health stations where a great many mothers are seen, and I imagine that they get much good advice. Nevertheless, the maternal death rate continues in spite of these thirty-six prenatal clinics. Something must be wrong. The difficulty lies in the fact that these clinics have no organic connection with the hospitals where the great majority of the mothers are later delivered. Our prenatal clinics are so many blind alleys. When these mothers come to the hospitals for confinements the physicians do not know what they should

Public Health News

Qualified Psychiatrists

A Board of Qualified Examiners in the State Department of Mental Hygiene is established by Chapter 459 of the Laws of 1936. The Board, composed of Dr. Frederick W. Parsons, Commissioner of Mental Hygiene, Dr. Vernon C. Branham of Woodbourne, New York, appointed by the Commissioner of Correction, Dr. Lloyd H. Ziegler of Albany, appointed by the Superintendent of Education, and Dr. Israel Strauss of 116 West 59 Street, New York City, selected by the Medical Society of the State of New York, convened in Albany on June 10 and soon will be prepared to issue certificates as Qualified Psychiatrists to approved applicants.

The Code of Criminal Procedure has been amended requiring courts appointing a commission to conduct an inquiry into the mental condition of persons charged with crime to include in the commission at least one qualified psychiatrist who in addition to being duly licensed to practice medicine in New York State shall meet one or more of the following statutory requirements:

- 1 Two years full time practice since January 1, 1920 in the care and treatment of persons suffering from mental diseases or mental defect in an institution providing for the care of such persons and having accommodations for at least fifty such persons, or
- 2 Has devoted the five years immediately prior to filing his application for certification to a practice confined wholly or substantially to the care and treatment of persons suffering from nervous and mental diseases or mental defects, or
- 3 Has had three years' experience in a clinic approved by the board devoted to the diagnosis and care of mental disorders and whose competency has been certified by two psychiatrists duly qualified pursuant to the provisions of this act.

Application blanks may be secured by addressing the Department of Mental Hygiene, Albany, New York. The application, when completed, is to be mailed to the above address, accompanied by a check or money order for five dollars.

*New York State Department of Mental Hygiene
June 12 1936*

MATERNAL MORTALITY

Unnecessary Maternal Deaths—How Long Will They Continue?

LOUIS I. DUBLIN, PH.D., *New York City*

Third Vice President and Statistician, Metropolitan Life Insurance Company

An evil genius continues to bedevil the maternity problem in our city, in our State, and throughout the United States. The deaths of mothers incidental to childbearing will not go down in spite of our public meetings, in spite of our scientific reports and analyses, and in spite of the resentment of a bewildered public. In almost every other field of modern health work the difficulties are largely resolved as soon as we understand the fundamental causes behind the problem, and as soon as we apply the necessary measures of control. Deaths from tuberculosis are rapidly declining everywhere in the United States. Infant mortality is being reduced even during a period of depression. Diphtheria deaths are rapidly reaching a minimum. These gains have been achieved directly as the result of the application of scientific knowledge and methods. But with regard to our maternal deaths,

these continue their merry dance as though all of our meetings, all of our talking, and all of our campaigns were just so much empty wind.

The facts are perfectly clear. In the City of New York we record every year between 650 and 700 deaths from maternal causes. One mother dies in every 160 confinements. Much the same rate prevails in New York State and in the country as a whole. It is still true that about 15,000 women die each year from these conditions in the United States just as it was four years ago when I last addressed the annual meeting of this Association, and I may say further that the figures were much the same fifteen years ago.

Recently, the New York Academy of Medicine, aroused by the obviously unsatisfactory situation and responding to a very real public demand, appointed a group of

Presented at the Sixth Annual Mother's Day Meeting of the Maternity Center Association at the Waldorf Astoria May 21, 1936

the hospitals where they will be confined. In this way, the gulf between the clinic, on the one hand, and the hospital, on the other, will be spanned, and in such a system the clinic records of the patients will always be available to the hospital physicians. Many of the difficulties incidental to confinement will thus be largely anticipated and the necessary care will be more likely available.

In closing I must repeat that the chief consideration as I see it is the unity of direction of the program under proper medical authority. We have too many agencies of good will, each going off in its own direction, instead of coordinating its efforts and tying up its good will and services with all of the others into one unified, well-financed and well-sponsored program. Whenever maternity work has been successfully carried on, this method of coordinating skilled effort has been followed. We can do likewise. We have the necessary skill. We have the necessary funds and we certainly have the problem before us. It is for us then, to get together once and for all and cut the Gordian knot. We must forego petty jealousies and such issues of prestige as between the several city departments. In my judgment the best procedure would be to place the responsibility squarely in our City Department of Hospitals. The public hospitals, where a large part of our women are confined, must be better staffed and supervised. The prenatal clinics should be the outpatient departments of these hospitals and the visiting nurses and working housekeepers must all be integral parts of the service. This is for the poor. For those in better circumstances who are confined in our voluntary hospitals, we can only hope that the influence of the organized medical profession will maintain high standards in keeping with the best New York tradition.

I should not, however, appear to be proposing a full-fledged plan for the City of New York as Dr. Haven Emerson will develop this phase of the program.

Speaking to a national audience it is gratifying to point out that there never was a better time than today for raising of national standards for maternity care. The subsidies made available under the Social Security Act should make possible a rapid extension of good maternity service country-wide. It is the plan of the Federal Children's Bureau to pay sizeable sums of money to each of the State Departments of Health for the promotion of better maternity care. The plan calls for the organization of a division of maternal and child health in each State, coordinate with all other major administrative divisions, and with a full-time director responsible to the State Health Officer. I know that many men and women who are hearing me will wish to secure for their respective communities the maximum of Federal aid supplemented by State and local funds to make available to the women in that community adequate maternity care, prenatal, delivery, and postnatal, and having made it available that they will feel the responsibility for teaching expectant mothers the need for utilizing the facilities which the new set-up will make possible. It is not enough to have the machinery, it is necessary that this machinery shall be used and used intelligently. Let us hope that under this new dispensation we shall be able to lift ourselves out of the slough in which we have been these last twenty years and that when we meet again we may be able to say that at last the cloud of maternal mortality, which has hovered over the country, is beginning to break and that we see light again.

Address by Dr. Haven Emerson

*Professor of Public Health Practice, College of Physicians and Surgeons,
Columbia University, New York City*

Today at the zenith of seventy-one years of official health organization in this City, in a nation where 127,000,000 enjoy such life expectancy and such prevention of disease as no nation of such size and complexity of elements has exhibited in recorded history, we find ourselves challenging the sciences and the professions who have achieved this, to save the mother and the babe. The babe is safer among us than ever before, not so the mother. Almost paradoxical it is, and yet inevitable that as mothers become rarer the more precious they are to us. With a plethora of grandparents such as has never been known

before, with a great abundance of maiden aunts, or at least unmarried women, potential mothers, we have less births to deal with.

If maternal deaths were calculated against the total population we should find that the rate has fallen as have many other causes of death.

However, we properly measure the loss of mothers in terms of living children produced, and as you have heard, we are not making much progress in this particular kind of life-saving. In the ninety-three years since Dr. Holmes became the Galahad of his day, or in the ninety-one since Semmelweis

know about them and what is available on their prenatal records. The right hand of the obstetrician does not know what the left hand of the clinic physician has done. Evidently, the division of responsibility between the two major departments of the City's services has not been conducive to a happy solution of our problem.

Furthermore, there are good indications that the supervision of the clinic staffs is not of the highest order. The borough chiefs in charge of the baby health stations and of the maternity clinics are not trained obstetricians. What kind of supervisory service can they render to the clinic physicians under their charge? What type of care can the clinic physicians be expected to render when they are paid at the munificent rate of \$4.00 for every three-hour clinic session? Obviously, there is something rather absurd in a municipal arrangement of this sort. We can and must do better than that.

At the present time about eighty-one percent of our mothers in New York are delivered in the hospitals and nineteen percent in their homes. One would think that under such conditions the maternity problem would be extraordinarily simplified. After all, the number of our hospitals, both municipal and voluntary, is not very large and it should be possible so to supervise the work done there as to assure each woman good medical care. But what do we actually find? The prenatal work is inadequate. We have not set up the necessary machinery in our hospitals for really effective service. In our municipal hospitals, where a large part of New York's women are confined, the medical skill available is far from the standard of excellence which should prevail. Our voluntary and proprietary hospitals fall into two groups: one in which the service is of a high order, the other where much is left to be desired, and this is clearly indicated when we trace back the maternal deaths to the institutions where they occurred.

Nor have we set up the necessary machinery in our city for the selection of our patients for hospital care. The selection is left largely to chance, financial status or the desire of the individual woman. In too many instances, patients are taken into our hospitals not on the basis of their medical need but because they have money in their pockets to pay the bill or because they have no money at all. In a well-managed plan, the special needs of the individual patient would determine early in pregnancy the arrangements best suited for her confinement. Some women would be better confined in the hospital, others would do equally well at home. The particular choice of the hos-

pital would unquestionably be influenced, in many instances, by the particular medical needs of the patient. Through the exercise of judgment at the right time the element of chance, and the hazard accompanying it, could be reduced to a minimum through the proper steering of patients to the right institutions.

Because of crowded conditions, patients are being sent home from our hospitals on the fifth or sixth day after the baby's birth and advised to rest, or are sent home from the prenatal clinics and advised to rest. But no provision is made to make rest for these women possible. There are no working housekeepers available except in the rarest instances, and few hospitals arrange to admit patients during pregnancy or keep them for a sufficient length of time after delivery when everything is not normal.

The first step, then, would seem to be the preparation of a well-conceived and coordinated plan which would apply to the City of New York as a whole and to each of the boroughs. This plan must be the product of the best medical intelligence and skill we have. We need a Council of obstetricians at the head of the work in each borough. We, in New York, have been particularly fortunate in our large number of skilled obstetricians, who have given impetus and direction to the national movement for the protection of women in childbirth. The City will never be able to pay you gentlemen assembled here for your services. I certainly do not want to leave the impression that the unfortunate situation which confronts us lies at your door; it is rather the result of our lack of a coordinating principle. New York is a large city and it will not be an easy matter to bring all of the constructive forces together. My hope is that you will wish to appoint, out of your number, a council who will represent your thoughts and your wishes.

After mature deliberation, the members of the council should work out a scheme which would be part and parcel of the organized official and non-official maternity work carried on in the City. This council would bring together the machinery we now have in our prenatal clinics, in our hospitals and visiting nurse services, and they would coordinate them under one direction and leadership. They would arrange to have the prenatal clinics skillfully supervised. They would establish the unswerving policy in our city to employ only trained and experienced men and remunerate them adequately. Then our mothers attending the clinics will get good care. The arrangements made for them for their confinement will be more adequate because all the clinics will be the out-patient departments of

services, its regulatory power over proprietary hospitals and sanatoria, the organized medical profession and in particular, the New York Obstetrical Society

If these three bodies with the resourcefulness and sympathetic public appeal and prestige of the Maternity Center Association make a sustained effort to analyze currently the causes of loss of maternal life

and make this information effective through official and professional channels, and will assume responsibility for specialist direction of obstetrical care on a borough and neighborhood or district basis, the maternal mortality for the whole city would more nearly equal that of certain hospital and home delivery services, and thus become creditable instead of excessive, as at present

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested

Albany County

THE JUNE MEETING of the Medical Society of the County of Albany was held in the Auditorium of the Albany College of Pharmacy, on June 24. An address on "The General Practitioner and His Orthopedic Problems" was given by Dr Philip L. Forster

Broome County

THE BROOME COUNTY Medical Society and the Binghamton Psychiatric Society held a joint meeting at the Binghamton State Hospital on May 25. The speakers were Dr O C Perkins, of the Long Island College Hospital, Dr G S Lape and Dr H S Gregory

Chemung County

THE ELMIRA BOARD OF EDUCATION and the Chemung County Tuberculosis Society have purchased an x-ray machine and since the first of the year skin tests have been given 1,235 pupils in the grade schools

Erie County

IN ORDER TO LEGALIZE the reappointment of Dr Walter E. Haley to the board of managers of the Buffalo City Hospital, the Buffalo Common Council voted unanimously to permit a person to serve on both the hospital and health boards, and Mayor Zimmerman announced his reappointment. His post as chairman of the health board pays \$1000, the other carries no salary

Greene County

THE GUEST SPEAKER at the meeting of the Greene County Medical Society at Catskill on May 12 was Dr James Rooney of Albany, and his topic was "Diseases of the Coronary Blood Vessels." Dr Clinton P. McCord, of Albany, psychiatrist, also gave a brief and interesting talk. The semi-annual meeting is scheduled for July 14

Herkimer County

CLINICAL REPORTS and presentation of specimens marked the session of the Medical Society of the county of Herkimer on June 9 at the Mohawk Valley Country Club

Kings County

THE KINGS COUNTY Medical Society, meeting on May 19 voted to support the Co-ordinating Council of the five metropolitan county societies in its efforts to obtain, through provisions in the proposed city charter, fees for physicians on the staffs of municipal hospitals

Monroe County

INVESTIGATION OF ILLEGAL medical practices in the Rochester area by the State Department of Medical Examiners has resulted in several arrests

Nassau County

THE WOMEN'S AUXILIARY to the Medical Society of Nassau county concluded the current season with a luncheon at the Wheatley Hills Golf club, East Williston, on June 11

Guests of honor were Mrs J L. Bauer, of Brooklyn, president of the auxiliary to the Medical Society of the state of New York, Mrs F E. Elliott, second vice president, and Mrs E. A. Griffen, president of the King's county auxiliary

New York County

DR. GIROLAMO BONACCOLTO has been appointed Assistant Professor of Clinical Ophthalmology in Columbia University

Niagara County

MEMBERS OF THE Niagara County Medical Society at a dinner meeting at the Hotel Niagara at Niagara Falls, on June 9, heard an address by Dr Carl E. Badgley, professor of orthopedic surgery at the medical school of the University of Michigan, on

revolted against the uncleanness that led to maternal death in Vienna, we have come far in the prevention and treatment of disease, and still have failed to bring to all mothers the security of good judgment, patient skill, and immaculate cleanliness now achieved for some nations and for the more fortunate in most.

If the answer were simple we should not have need of such annual meetings as this, of serious, determined women and some physicians, convinced of the necessity for action and the certainty of achievement.

Can we borrow and adapt from the successes of others and create a measure of security for the near future in our own city and nation?

There are hospitals with too many patients for the beds available, and others with too few nurses for good bedside care. There are patients unattended, and others the victims of excessive intervention and solicitousness. And there are abundant instances of medical incompetence and neglect, as of patient indifference, ignorance, and delay. Our obligation is more to develop a promising plan for improvement than to indulge in the reiteration of ever more refined statistical evidence of error.

Summary

The elements of services appear fairly clear while we are not yet implemented to make a well-conceived plan effective.

Prompt, continuous, prenatal supervision under the direction of an obstetrical specialist should lead to a plan for the confinement and postpartum care.

Normal multiparae should be encouraged to be delivered at home when it is a choice between home and a crowded hospital.

Whether or not delivery is by an obstetrical specialist such a person should be at the disposal of any woman by whomsoever attended, in the event of any abnormal episode in the pregnancy, delivery, or after care.

In the interest of efficiency, acceptance of responsibility for consultant service for confinements in a certain neighborhood or district should be acknowledged by a hospital maternity staff or by an independent obstetrical practitioner by arrangement openly arrived at through the County Society or Obstetric Society.

All obstetrical care of maternity patients unable to pay for care during confinement should be provided from pre- to post-natal by the Department of Hospitals or by arrangement with other hospitals on a contractual basis.

Prenatal clinics should be operated only by the Department of Hospitals or by hospitals with a maternity service. The func-

tion of the Health Department is to promote the use of, but not to operate, service stations for maternity.

It would be well if every obstetrical death were reported at once by the Department of Health to its Advisory Obstetric Council for immediate study and report to the Commissioner of Health, with opinion as to the apparent responsibility for the death and suggestions for official or professional action in the matter, and to the medical staff of the hospital in case it was reported from a hospital.

This would amount to the adoption by Civil government of the principle of the pathological conference which is the conscience of all well-organized hospital service.

The Commissioner of Health might well ask of his Obstetric Council an annual report of maternal mortality classified by hospitals and by the medical attendant.

Each borough should, through its County Medical Society, recognize an Obstetric Council upon which the medical profession of the Borough can rely for information, consultation service, and such professional policies of discipline as may prove necessary to protect the public against unqualified obstetrical attendance.

Such an obstetric council would issue for public reference on request a list of practitioners of medicine known to be competent to attend normal deliveries and willing to consult with obstetric specialists on the occurrence of abnormal situations.

The public is entitled to some form of professional safeguard against its employment of licensed physicians who are not experienced in obstetrics.

The untrained midwife cannot legally practice in New York City or State, and as a matter of fact she does not. The licensed midwife is a disappearing factor and not at present of great concern in this city.

The midwifery nurse as now trained in this city and availed of mostly elsewhere, is a valuable adjunct to the obstetrician and in many respects a safer attendant than the physician who does not practice obstetrics as a specialty.

There is some reason to believe a voluntary districting system for maternity hospitals not affiliated with medical schools, would prevent the lack of continuity of obstetrical responsibility which is at present of common occurrence.

Three elements are indispensable for a concerted forward movement in protection of maternity in New York City—the Department of Health with its records, its authority, its educational opportunities, the Department of Hospitals with its organized medical boards, its numerous maternity

Medicolegal

LORENZ J. BROSNAN, ESQ

Counsel, Medical Society of the State of New York

Practice of Medicine Without License

A recent case* in which the highest Appellate Court of one of the Pacific Coast States sustained a conviction of an unlicensed medical practitioner should be of general interest.

The defendant in the case was the holder of an appointment to teach in the so-called Church of the Illumination. At the time in question he was acting as a preacher for a certain Church in the city where he resided and engaged in the practices which became the subject of the complaint brought against him. The specific charge was made against the defendant of the crime of practicing medicine without a license, that he unlawfully engaged in the practice of medicine and held himself out as practicing medicine and that he had treated a certain "M" for cancer by the use of drugs and medical preparations without having at the time a valid license issued by the State Board of Medical Examiners.

Upon the trial it was shown that for two to three months prior to the death of M, the accused, V, had administered to M what was described as local physical treatments and had furnished and administered drugs to him. He had been paid \$30.00 a month for his services and had been reimbursed for the price of the drugs (he had been paid for the drugs and medicines somewhat over \$200.00).

The wife of the deceased and the members of her family and certain nurses, who had assisted in the care of the patient, all testified that during the course of the care rendered the patient they understood that the defendant was a doctor, that he had acted as a doctor and not in a religious capacity. Under his directions the nurses kept the usual charts of the patient's condition and administered medicines to the patient as directed by the defendant. All of them called him "Doctor."

According to the defendant he had been called "Doctor" due to the fact that he held the degree of Doctor of Divinity. But it appeared from the testimony that he had issued receipts for payments made to him in which he abbreviated his professional title as "Dr." The defendant claimed that the substances which were administered by

him and under his supervision were concentrates used as food and that they were not in any sense drugs. The said testimony, however, was offset by the testimony of a recognized chemist and pharmacist who examined and analysed each of the substances and gave as his opinion that they were drugs and not foods.

The defendant insisted upon the trial that he had been guilty of no violation of law but had merely followed the tenets of the Church with which he was affiliated. Those tenets he summarized as follows:

We believe that there is a purpose for our existence on Earth, and that this soul or divine spark which is the soul of the human body is there for a purpose. The body is a sort of specialized soil to receive it in which it grows and develops, consequently the body should be kept in perfect condition, consequently through our teachings we always have held forward the healing of the ailing and the sick and bringing them to bodily perfection. We believe in the fourfold development, that is taking care of the body, mind, spirit, and the soul.

The defendant was corroborated in his claim that he had merely carried out the teachings of his particular religious faith by a local official of his Church. The case, however, was submitted to the jury and the jury found that he was guilty of the charges.

From the judgment he took an appeal to the highest Court of the State upon the principal grounds that his conviction was in violation of his constitutional guaranty of religious freedom.

The Court affirmed the verdict and judgment of the Trial Court, saying in the course of its opinion:

Appellant contends that this prosecution violates his rights under the constitutional amendment with reference to religious freedom. Sight must not be lost of the difference between the exercise of religious belief and the practice of medicine. The enforcement of reasonable and necessary regulations in the practice of medicine, was commonly provided for in the statutes of the different States enacted under the general police power as essential in the preservation of the public health and general welfare, must not be taken to be violative of this provision of the Constitution. The test is not that a drug may be administered without harm in a given case, but that the practice of prescribing and administering drugs must be left to those whose qualifications and training, ac-

* State v. Verbon, 8 Pac. (2nd) 1083

"Some of the Common Fractures Met in General Practice"

DR O GRANT HARRINGTON, of Niagara Falls, a past president of the Niagara Falls Academy of Medicine, died at Lowville on June 1 at the age of 69

Oneida County

DR. WINSLOW, PRESIDENT of the Medical Society of the State of New York, is to be the guest speaker at the annual outing meeting of the County Medical Society on July 14

Onondaga County

DR A W SOHRWEIDE, of Syracuse, addressed the Oswego County Dental Society on June 1 on "Diseases of the Oral Mucosa"

Orange County

A CRITICAL EDITORIAL in the Newburgh *News* condemns the retirement of Dr Ralph Waldo Thompson as health officer of New Windsor, after twenty-three years of faithful service, by the Town Board, and says its action "reflects no credit" on the board. Dr Thompson, it adds, "has been faithful in high degree," and "the service he has given has far exceeded the compensation he has received, for the welfare of the people was his ever-present concern"

Otsego County

FERDINAND HOYT of Beacon, compensation court referee, was the principal speaker at the dinner-meeting of the Otsego county Medical Society at the Oneonta hotel on June 10

Referee Hoyt and members of Compensation court staff spoke of the workmen's compensation act and discussed the new laws which were effective last November. Other speakers included Dr Leon Fisher of the State Labor department, David Harrison of Albany and B C Hamilton of New York. A round table discussion followed

Putnam County

OFFICERS WERE ELECTED for the coming year at the annual meeting of the Putnam County Medical Society at the Carmel Country Club on June 3. Those elected were Dr Coryell Clark of Cold Spring, president, Dr Robt. Richtie, vice-president, Dr John T Jenkin, of Mahopac, secretary, Dr Alexander Vanderburg, of Brewster, treasurer, Dr William Miller of Brewster, delegate, and Dr James L New, of Mahopac, alternate.

Supt. Weber, of Vassar Hospital, spoke on group hospitalization. The next meeting, on Sept 29, will be a card party, with the doctors' wives as guests

Queens County

THE QUEENS COUNTY BAR ASSOCIATION and the Queens County Medical Society held a joint meeting May 26, at the Medical Society Building

Rensselaer County

BUSINESS AND SCIENTIFIC discussion were mingled at the May meeting of the Rensselaer County Medical Society in the Troy Health Center. Dr William B D Van Auken presided. The discussion program opened with a talk on "The Physician as a Pharmacist Sees Him," by Wentworth H Barnes. Scientific matters were treated by Dr Harold G Haskell and Dr Victor C Jacobsen. The former's topic was "The Ambulatory Treatment of Fractures." Dr Jacobsen discussed the problem of the pigmented tumor

Saratoga County

PHYSICIANS FROM Northeastern New York, Massachusetts and Vermont gathered on June 4 at Saratoga Springs for the fourth annual Spa-Therapy meeting of the Medical Society of the County of Saratoga. Their wives accompanied them

Outstanding authorities of three states addressed a session in the Simon Baruch Research Institute at the Spa and another at Riley's Lake House where a dinner dance followed the technical program

The Saratoga County Medical Society, headed by President T J Goodfellow, and its newly organized Ladies Auxiliary, worked together for the success of the affair, inviting more than 825 physicians and their wives to what they described as "the climaxing medical meeting of the year" of the Society

Schenectady County

THE SCHENECTADY COUNTY Medical Society, at its semi-annual meeting and dinner on June 4, paid honor to Dr Dayton L. Kathan, in observance of his 50 years in practice.

Westchester County

THE PHYSICIANS IN New Rochelle have been presented with a *fait accompli*, says the *Westchester Medical Bulletin*, in the peremptory abandonment of the customary system of medical relief whereby patients are permitted to select their own physicians who are paid on a fee-per-call basis, with TERA reimbursement to the city,—and the substitution of a plan whereby a very limited number of physicians will be engaged on a salary to attend the needy clients on a part time contract basis

Across the Desk

A Shabby Racket Ended

WHILE ANY FORM OF "RACKET" that preys upon the sick or the poor is heinous enough, a game that exploits the insane and feeble-minded who come before our courts seems especially malodorous. Yet we are told that for years the political hangers-on in some parts of the state have been extracting thousands of dollars from the taxpayers by what is styled "the lunacy commission game."

Here is how it was worked. The law hitherto has provided that one of the three members of a lunacy commission should be a physician of at least three years' practice. We might suppose that the magistrate appointing the commissioners would pick a specialist in mental diseases, but it is reported that in one of the counties of New York City one of the physicians most often favored with a fat fee was an obstetrician, and another was an ear, nose, and throat specialist. The qualifications of the other two members of such commissions for deciding the fate of some poor unfortunate may be left to the imagination. With institutions all over the state having plenty of full-time, salaried psychiatrists available, the courts have too often chosen men whose chief virtue was that they "stood in" with the local political machine.

Straighten the Politicians with Strait-jackets!

Now this particular racket has received its quietus. Governor Lehman has signed two measures known as the Kleinfeld-Robinson bills, one providing for a state Board of Psychiatric Examiners to certify qualified psychiatrists, and the other provid-

ing that henceforth lunacy commissions in this state shall consist of such a certified psychiatrist, a member of the bar, and a third person not specified. These laws "should go a long way in stopping the flow of easy money so freely paid to lunacy commissions in the past," remarks the *Brooklyn Eagle*, which has been fighting this racket ten years. One member of the Board of Psychiatric Examiners is to be chosen by the Council of the State Medical Society,* and we may be certain that any future efforts to besmirch the fate of the mentally ill with the mire of politics will be halted in its tracks.

One of our leading psychiatrists was deploring in an address the other day the evil effect of politics in securing the appointment of unworthy candidates for positions in our mental institutions, and he said the worst thing he could wish for the meddling political bosses was that they should ever have to be under the care of the incompetents they were pushing into hospital jobs. Well, why not? Can't we find some red-blooded lawmaker to father a bill that will "make the punishment fit the crime," and railroad the political crooks into straitjackets? Perhaps that would take some of the villainous kinks out of their psychology.

* As we go to press we are informed that this new law has gone into operation, that the State Medical Society, on official request, designated Dr. Israel Strauss of New York City as its choice to sit on the new Board of Psychiatric Examiners, and that Dr. Strauss has been formally appointed to that position by the State Department of Mental Hygiene.

A Chance for Medical Crime-Detectors

READERS OF SHERLOCK HOLMES will recall that his colleague, *Watson*, was a doctor. *Watson* usually distinguished himself by guessing everything wrong, which was a rather unkind dig at the profession by Conan Doyle, himself a medical man. Whether kind or unkind, it was undeserved, anyway, for in the modern scientific detection of crime the medical expert has proved to be a key man. When Dr. Charles Norris died last September, his loss was acutely

felt at once, and a movement is now on foot to provide an institution to carry on the kind of work he did so brilliantly as Chief Medical Examiner in the investigation and detection of crime.

A book as fascinating as anything Conan Doyle ever penned could be written on the genius of Dr. Norris in detecting crime, and if the new Institute of Forensic Medicine is established as planned, Scotland Yard may have to look to its laurels. It was only

ording to the standards fixed by the Statute prepared them for that service.

The Court in its opinion quoted from the earlier case as follows

The statute prohibits the practice of medicine without a license, but excepts from its prohibition "the practice of the religious tenets of any church." * * * But things were done by this defendant which no good faith could justify. He combined faith with patent medicine. If he invoked the power of spirit, he did not forget to prescribe his drugs. "It is beyond all question or dispute," said Voltaire, "that magic words and ceremonies are quite capable of most effectually destroying a whole flock of sheep, if the words be accompanied by a sufficient quantity of arsenic" (Morley's Critical Miscellanies, III, p. 17). The law, in its protection of believers, has other cures in mind. The tenets to which it accords freedom, alike of practice and of profession, are not merely the tenets, but the *religious* tenets, of a church. The profession and practice of the religion must be itself the cure. The sufferer's mind must be brought into submission to the infinite mind, and in this must be the healing. The operation of the power of spirit must be, not indirect and remote, but direct and immediate. If that were not so, a body of men who claimed divine inspiration might prescribe drugs and perform surgical operations under cover of the law. While the healer inculcates the faith of the church as a method of healing, he is immune. When he goes beyond that, puts his spiritual agencies aside and takes up the agencies of the flesh, his immunity ceases. He is then competing with physicians on their own ground, using the same instrumentalities, and arrogating to himself the right to pursue the same methods without the same training.

The Court concluded that from a fair consideration of the record, the case had been properly submitted to the jury and on the record the jury was well justified in its verdict that the defendant had been guilty of doing the acts complained of and that he

had in the commission of said acts actually engaged in the practice of medicine contrary to law

Death Following Cesarean Operation

A young married woman, twenty-five years of age made arrangements with a physician specializing in obstetrics and gynecology to attend her during her period of pregnancy and to deliver her. He saw her regularly from time to time during her period of pregnancy and everything seemed to be satisfactory, and in due time she went into labor. He ordered her to a hospital where he examined her and found that the head of the child was abnormally large. After watching the case for about twenty hours he decided a cesarean operation was necessary and with the consent of the husband and the patient, under a general anesthesia opened her abdomen and uterus, and removed the child. The child lived only about an hour.

The condition of the patient after the operation seemed to be satisfactory but shortly after she developed a septic condition. The doctor attended her regularly several times a day and called consultants on the case. The patient's condition became worse and she died on the eighteenth day after the operation. It was ascertained that the infection was streptococcus hemolyticus, which was given as the cause of death.

An action was brought by an administrator of the patient against the doctor in which the charge was made that the defendant had caused the death of the patient by negligence and want of skill. When the action was about to be reached for trial plaintiff's attorney showed no inclination to try the case and when pressed for a disposition of the matter consented to discontinue the action.

A REVERBERATION FROM THE HOSPITALS

An echo, or perhaps a heavy reverberation, of the State Medical Society's strictures on hospital business practices was heard at the conference of the State Hospital Association in Buffalo. It will be remembered that the report of the Committee on Economics of the State Society rapped "some hospital corporations" over the knuckles for dealing in professional services for profit. Other resolutions opposed too much lay management of hospital affairs.

The reverberation comes in a resolution censuring the medical profession for "seeking to revolutionize" hospital practices and hospital-doctor relationships through legislation and "bureaucratic" control, adopted

on May 22 at the annual conference of the Hospital Association of New York State in Buffalo.

The resolution calls for a "spirit of co-operation" from the doctors in correcting any wrongs existing in hospital practices. It also requests that "medical men insist their local and other organizations enter into helpful co-operation without resorting to the public press, legislative bodies and other means."

Another resolution urged training and employment of medical practitioners as hospital anaesthetists instead of the extensive use of nurses for this work.

declares, "that the feeble-minded have large families or are more prolific than the general population, nor is this true of the insane." Indeed, all the facts reveal "a low marriage rate, a relatively low birth rate, a high death rate, and even a high divorce rate" The only increase in mental ills is in reported cases of senile mental diseases, due to the advancing age of the population, and to the growing tendency to send such patients to mental hospitals

"Keep Thy Shirt On"

Furthermore, "the mechanism of heredity is entirely unknown." Epilepsy is now believed by many authorities not to be hereditary, and "as to criminality, none of the important geneticists believe that sterilization would have any effect." Instead of doing good in mental cases, it might do harm, for "our committee takes note of the fact that considerable genius is associated with mental disease, that especially is the manic-depressive temperament closely related to superior ability, and that any sterilization procedures which operate blindly and without taking into account the total

assets of the personality may do more harm than good It becomes quite obvious from a study of literature that much genius would have been lost if drastic sterilization laws had been enacted in times past."

Dr Myerson remarks dryly that "the crying need of eugenics, as this committee sees it, is not legislation, but real research" And it might be added that our entire army of social reformers need a dose of that medicine. Going off at half-cock seems to be the best thing they do They appear to wake up in the morning all afire with an idea to twist society into some new shape, and they want to put it into law before lunch And we all have to suffer for it, if the idea is wrong

The tendency now is to discard all the old standards and adopt anything new So it looks like a good time to take a new national motto Casting aside, then, all the highfalutin that usually marks such things, let us get down to brass tacks, as it were. A motto to fit the times for this country, or any country, or all the world right now, would well be

"Keep Thy Shirt On"

Books

Books for review should be sent directly to the Book Review Department at 1313 Bedford Avenue, Brooklyn N Y Acknowledgment of receipt will be made in these columns and deemed sufficient notification Selection for review will be based on merit and the interest to our readers

I'd Live It Again. By Lieut-Col E J O'Meara Duodecimo of 324 pages, illustrated. Philadelphia, J B Lippincott Company 1935 Cloth, \$2.50

This autobiographic sketch from the pen of an English Army Medical Officer is a book of 324 pages, including an index and eleven photographs The Author is one of several in his family who took up medicine, notably Barry O'Meara, Napoleon's doctor at St. Helena, who was the Author of "A Voice From St. Helena, Napoleon in Exile," an indictment of Governor Sir Hudson Lowe's treatment of the ex-Emperor while there The book is sketchy but well worth reading Full of incident, it creates an atmosphere of its own and gathers details of the life of the people from the vantage ground of one peculiarly in intimate touch with them Many manners and customs are revealed and explained in a way only possible to an army medical officer The book is replete with tales of India's superstition, religion, domestic habits, and sport life, obtained, so to speak, at first hand

J M VAN COTT

Modern Home Medical Adviser Your health and how to preserve it. Edited by

Morris Fishbein, M D Quarto of 905 pages, illustrated Garden City, Doubleday, Doran & Company 1935 Cloth, \$9.50

Dr Fishbein evidently feels that the old-time family medicine book has served its usefulness, and that in order to again win its prominence along with the Bible, it has to be overhauled Hence, this new medical home adviser And so, whereas the old-fashioned family doctor book was often the product of some third-rate drug house in the guise of a doctor, whose real aim was to befriend the reader with pills and lotions, this new book of 900 pages has no medicines to sell except the collected advice of a group of 24 distinguished physicians whose teachings are well recognized Credit for almost half of the contributions should be given to Dr Fishbein The reliability of the material can therefore be assured the reader

But there is one phase which can hardly be overlooked, namely, the attitude of the practitioner regarding such a venture. Will this book serve to substitute or to supplement the doctor's influence? Will the gastroenterologist welcome the meticulous prescriptions of the more common diets which he prescribes? Will the pediatricist feel

a few days ago, in fact, that a British commission, containing a high official of Scotland Yard as one of its members, came to this country to study American methods of crime-investigation. America has plenty of crime to practice on, and if our detectors come anywhere near our criminals in efficiency and activity, there is no reason why they should not lead the world, just as America is far ahead of other nations in fires and fire-fighting

Cinderella to Have Her Palace

The plan for the new Institute of Forensic Medicine has been studied for many months by a sub-committee of the New York Academy of Medicine, headed by Dr John A. Hartwell, Director of the Academy

It contemplates a building to cost around \$1,500,000, on land to be given by the city, where the five leading local medical colleges can carry on work and instruction in this branch of medicine. Hitherto forensic medicine has been a sort of poor relation, it seems, neglected and half-forgotten, and the idea now is to realize the old familiar folk-story idea, clothe the beggar-maid in silk, crown her with flowers, and seat her in a \$1,500,000 palace, ten times grander than anything Sheba ever saw

The brilliant successes of the "G-men" have been largely due to dogged scientific digging, and if the projected Institute is realized, it may easily be worth its entire cost every year in freeing our citizenry from the piratical raids of our buccaneers of crime.

Passing Counterfeit Ideas

MANY OF THE COMMON IDEAS that float about are totally mistaken, if we take the trouble to examine them, just as many of the coins we handle daily are possibly counterfeit. One of the commonest of these ideas is the notion that our civilization is in peril because the poor have many children and the rich have few. Sometimes the wealthy are referred to as "our best people," and the implication seems to be that if we could only have a mass-production of replicas of these "best people," then our civilization would rise to some sort of apotheosis. Dr Shirley W. Wynne, former Commissioner of Health of New York City, did not go as far as that a few days ago when speaking to the New York League of Business and Professional Women, but he said that "the wrong people keep having families and the right people cut their families through birth control"

This is an idea that has been harped upon by speakers and writers for years, but if the story of America teaches us anything at all, it is that the men who have made this country great have sprung from the ranks of the workers, from the poor and the near-poor, from the levels where people have to work, and struggle, and contrive, to win their daily bread. In those homes life is a serious business, and in those circles of our social order right and wrong stand out stark and clear, and are not obscured in a fog of wishful thinking that turns everything into a mist of uncertainty

It is a serious question whether parents who do not want to be bothered by the prattle of little voices are the ones to bring up families. Children, too, who grow up in the fine comradeship, the mutual helpfulness, the necessary self-sacrifice, yes, and the frequent bickerings and contentions, of a large family, are in an unrivaled school of preparation for life. The children of our "best people," meanwhile, are too often engaged in the hopeless effort to batter down roadside trees and telephone poles with high-powered cars. Isn't it a bit silly to wring our hands over the mistakes we think nature is making, and predict that civilization is going on the rocks? Nature is a pretty wise old dame who has seen thousands of prophets of doom mistaken. Maybe a new crop of "best people," better than the world has ever known, are in the making where we least suspect it

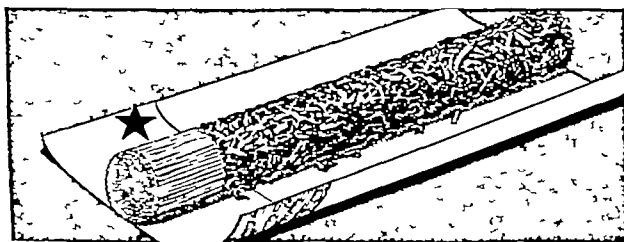
Sterilization of Insane Itself Irrational

Another brilliant idea that has not stood up under scrutiny is the plan to sterilize people with mental defects and certain diseases, to prevent them from filling the world with their kind. A thorough investigation of this matter has been made by a committee of the American Neurological Association, headed by Dr Abraham Myerson, of Boston, who tells of its findings in a letter to the *New York Times*. It finds "the claims of most eugenicists as to the incidence of mental disease and mental defect unwarranted." "It is not true," he

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pleased to find infant feeding formulae described, or the diabetic specialist to find measures described better than he can in the limited time allotted to him for his examination? How is the layman to determine from this book whether he is a victim of Gout or of Addison's Disease or of Bence-Jones Proteinuria? When Dr Fishbein tells us in the first chapter that the old family doctor was "especially known for his ability to practise the art of scientific observation," are we to entrust such a complete text in the hands of the layman especially when just such an art is needed to apply the facts embodied in this book?

It would be unfair to withhold from the layman the revelations of medical science, but as to how to educate him properly in such matters is a difficult matter to decide. Discounting these questions, it must be admitted that the book is excellent, and will no doubt be well received by that class of laymen who yearn for medical information. It would be for every physician to read this book from cover to cover.

EMANUEL KRIMSKY

Health Dentistry for the Community A Study of Present Needs and General Trends in the Provision of Community-wide Dental Care. By the Committee on Community Dental Service of the New York Tuberculosis and Health Association. Octavo of 85 pages. Chicago, The University of Chicago Press 1935. Cloth, \$1.00.

The foreword propounds the fact that the study was undertaken to supply the omission of dental conditions in its relationship to dental health of the public and to delineate the role of dentistry in the present changing social order. It lays down four primary objectives which are commendable.

The introduction—Chapter I endeavors to define its aim of rendering complete dental care in childhood as a community project. The study is based on observation of three classes in the population, namely all children, adults who have retained nearly all of their teeth, and those adults whose mouths have been badly damaged by dental disease necessitating considerable treatment and artificial replacements.

Chapter II deals with Dentistry for Children. It includes allusion to systematic dental care by Morrey, diets by Mellanby, McCollum, Hess, Howe, Hanke, Hawkins, Jones, Kugelmass, Bunting, Boyd and Drain, coming to customary conclusions.

Chapter III deals with adults of various classes showing the cost of care under varying conditions based on figures of the committee on the Cost of Medical Care and T.E.R.A. Clinics.

Chapter IV deals with "The Trend Towards Socialization." The compilers here set forth all of the apparently good arguments

Chapter V the 'Summary and Conclusion' shows as does the previous chapter, the guidance and practiced hand of the editor, Michael M. Davis. Although the introductory remarks were disarming regarding the sponsoring of any "plan of so-called socialized dentistry" this chapter advocates the use of the knowledge of existing conditions as "to utilize them as a basis for the statement that a comprehensive plan for socialized dental service is urgently needed."

It contains in addition four appendices, a well-compiled index which should prove very useful.

After all is said and done it is a very comprehensive little book, well compiled, excellently edited, informative and a necessary addition to the library of everyone interested in the subject.

LEONARD KOHN

Textbook of Attendant Nursing By Katharine Shepard R.N. and Charles H. Lawrence, M.D. Octavo of 433 pages, illustrated. New York, The Macmillan Company 1935. Cloth, \$3.00.

"This book contains the essential facts the student needs to know to carry on her daily work in caring for patients who are not seriously ill and to fill the breach in the household caused by such illness."

"Household economics, cooking for the family as well as for the patient and house-keeping in general are discussed. An adequate knowledge of the diseases with which the nurse will have to deal is given."

This book is the result of seventeen years' experience in teaching of nurses as given by the Household Nursing Association of Boston, Mass. The book is divided into four sections.

Section one on Anatomy, Physiology and Diseases is well-written, is fortunate in not being too detailed. In this section is discussed various diseases in their relation to anatomy and physiology. The second section on food and contributed by Ruth V. Hutchinson is very good. Sections three and four on Nursing Procedure and Miscellaneous topics on behavior, personal hygiene and private nursing, are particularly well-arranged. Practical suggestions are numerous. The care of a patient at home has been given particular attention. This the reviewer feels is especially important during this economic period when a large number of patients are of necessity cared for at home.

The title of this book is unfortunate because its value should extend further than students in attendant nursing. This book could be well recommended to students in home economics, housewives and trained nurses as a source book of practical and well chosen information.

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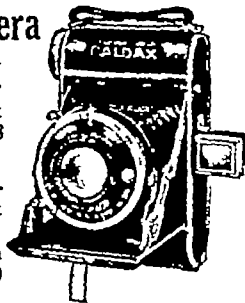
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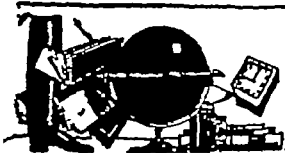
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It is hard to put into words the immense difference in the outlook upon life and upon the world that comes to the boy and girl who go away from the home town to attend a private school. They enter a new atmosphere that they have never breathed before. It is something far above and beyond anything they have known in the public schools at home, no matter how excellent they may be. It is the atmosphere of old traditions, high ideals, the feeling that past generations of students of "the old school" are expecting the students of today to live up to their levels and not let the school down. The boy and girl become part of something fine, something a bit higher than the ordinary run of American life, something that will continue through all their years stimulating them to loftier, nobler ways of thought and action.

The teaching staffs in the private schools are inspired with the same splendid spirit. Considerable talk has appeared in the newspapers of late about teachers in the public schools who are not fully loyal to America and American institutions. No such criticism is ever made of the teachers in the private schools. Every one of them is chosen on the twin bases of brains and character. Many are the equal of college professors in ability and in breadth and depth of scholarship and vision. They are trained to give special attention and instruction to fit the need of every pupil.

Private schools giving business and secretarial courses now combine them with cultural instruction so that the student comes out fitted to enter any office as assistant to the highest executive and prepared to go on and take managerial positions if the opportunity beckons. To ignore the great advantages now offered by these schools is to deprive the boys and girls of their best chance in life.

NEW YORK MILITARY ACADEMY

CORNWALL-ON-HUDSON, NEW YORK
A SCHOOL OF DISTINCTION

Milton D. Davis
B.A.M.
BRIGADE GENERAL, U.S. ARMY (RETIRED)

Travel and Resorts

Atlantic City Honors Physicians

Dr. Walt P. Conaway and Dr. Hilton S. Read, both of Atlantic City, Dr. E. R. Mulford, of Burlington and Dr. John F. Hagerty, of Newark, credited with bringing the American Medical Association Convention back to Atlantic City for 1937, were honored on June 1 for their successful efforts, at a dinner given by leading hotelmen at the Hotel Traymore.

The four doctors, delegates from the New Jersey Medical Association to the National Convention in Kansas City last month, acting with Albert H. Skean, head of the Atlantic City Convention Bureau, persuaded the medical conference to return to Atlantic City in 1937—an unprecedented action. Never before in their history as an association have the medical men returned to the site of a recent convention before two years have elapsed.

It was estimated that during the period of their last convention they spent more than \$1,000,000 here.

Those attending the dinner given in the Stratosphere Room of the Traymore, were C. D. White, Mayor, A. K. White and J. J. White, Jr., of the Marlborough-Blenheim, Julian A. Hillman, J. C. Myers, Hotel Chelsea, L. W. Grieve, Reginald G. Nefzger, The Claridge, H. F. Heuer, Colton Manor, J. Howard Buzby, Hotel Dennis, Sidney Knisel, Galen Hall, Harry Cassman, C. Henry Landow, Hotel Knickerbocker, Eugene Swilkey, Hotel Lafayette, J. E. Sutch, Gene C. Fetter, Jefferson Hotel, Max Malamut, William Malamut, The Ritz-Carlton, Everett Higbie, Hotel Runnymede, Harrison Cook, Seaside William Sheffield, Atlantic City Convention Bureau, Alvin Hunsicker, Joseph A. Keenan, Leonard G. Rundstrom and Bennett E. Tousey, General Manager, Hotel Traymore.

* * *

Safeguarding Against "Rail Cancer"

Every inch of Canadian Pacific Railway track from the Pacific to the Atlantic within the next few months will be electrically and microscopically examined as a safeguard against any non-visible defects, by a double-car Sperry Rail Detector which reached the Coast recently, and is now on its Dominion tour.

Safeguarding against "rail cancer," the



great menace to safe transportation and formerly the bane of railroad engineers, has long been a practice of the company, but this new equipment, capable of picking out any of a half-dozen minor faults in the rail throughout its entire length and breadth, definitely "observes" any suspicion of weakness, and is the most accurate rail test ever invented.

Highly technical and operating under its own gas-electric power, the Sperry cars are in the charge of W. F. Kohl, Field Supervisor, and his staff of five, and a cook-steward. The first car, inspecting the rails at seven miles an hour, is equipped with a searching unit of multi-tandem pickup coils, mounted on a detector carriage carried flexibly from the beam of the brush carriage. By a series of induction coils and relays, the searching unit encountering a defect, automatically marks the track by an electric paint gun, which shoots a daub of paint on the inside of the rail, and marks it in ink on a moving chart in the observation room.

At the end of the first day, the record is placed on any westbound passenger train, and delivered to the crew of the second Sperry car, whose mechanics attach it to a corresponding tape machine, so synchronized as to indicate several minutes ahead where a defect was previously found by the first car, thus allowing them time to stop, as the second car travels at forty miles per hour. By a hand-testing machine, the drop in "potential" between two contacts on the rail determines the size of the fissure or fault.

Canadian Pacific section crews then replace the offending portion of rail with a new one, thus removing any possible menace to high-speed passenger trains. Rails thus have to prove their right to carry modern, fast trains by this test in addition to the ordinary precautions of company track and sectionmen. The Sperry equipment is to be used periodically as a super-check on track conditions. This is the first use by a railroad of a device so intricate and so scientifically accurate to ensure greater safety in rail travel.

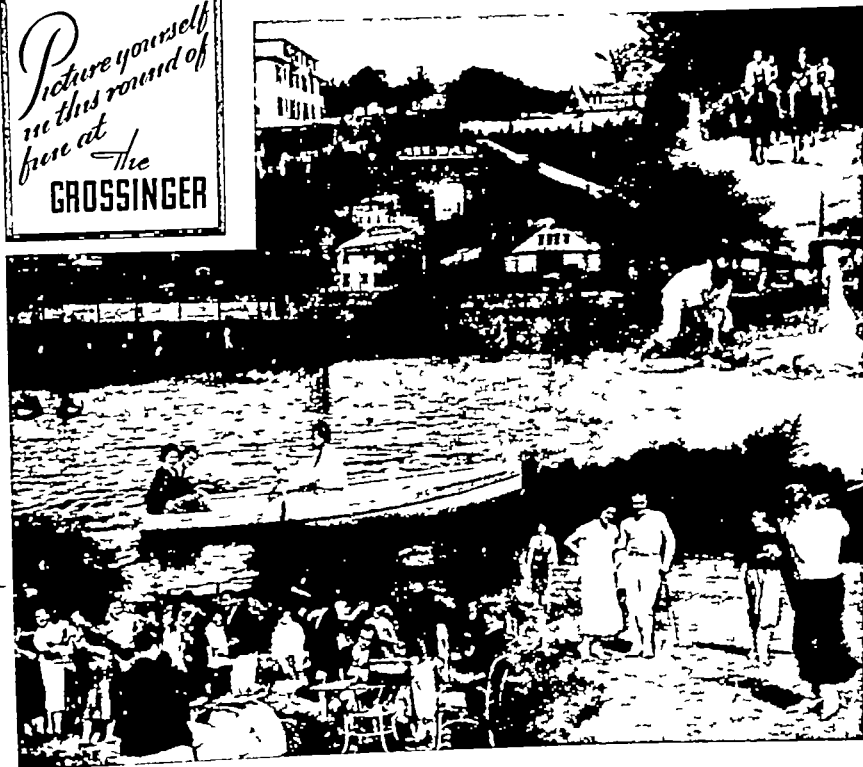
* * *

Asbury's Plans Nerve-soothing

Plans for the festival of music including a series of concerts by the New York Philharmonic Symphony Orchestra in Convention Hall here are creating considerable interest among hundreds of music lovers vacationing in the shore area centering about Asbury Park.

"where everybody
meets for happy
vacation days"

Picture yourself
in this round of
fun at
The
GROSSINGER



The
Grossinger

Hotel & Country Club • FERNDALE, NEW YORK

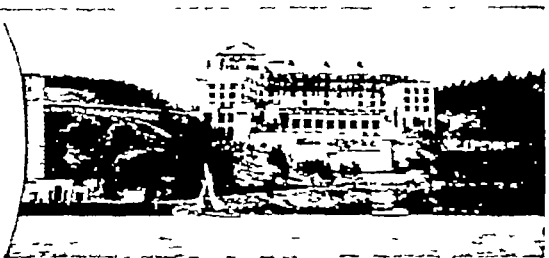
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ALL
YEAR

Please patronize as many July 1, 1936' advertisers as possible

PLACES for REST in the ISLES of REST

THE CASTLE HARBOUR

Bermuda's most elaborate and beautiful summer hotel, with its own beach and all sports facilities including Bermuda's loveliest pool. Unrivalled location facing Castle Harbour convenient to both Hamilton and St. George's. Moderate rates. Apply to Travel Agents or Robert D. Blackman, General Manager, Castle Harbour Hotel, Tucker's Town, Bermuda or New York representative 34 Whitehall St. New York.

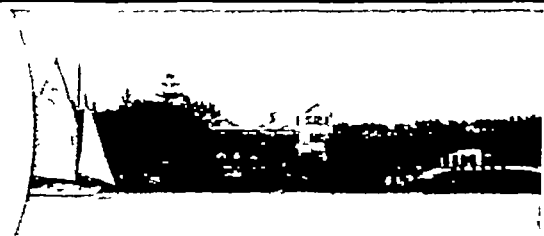


BELMONT MANOR

High above the islands of Hamilton Harbor, set in a semi-tropical park with breath-taking views on every side. Facilities for devotees of all sports. All conveniences for comfort. Maintaining best social traditions and catering to discriminating and refined people. Finest cuisine. For information etc.—John O. Evans, Manager, Belmont Manor, Bermuda or authorized travel agencies. Bermuda Hotels Inc. 500 5th Ave. New York N.Y. Pennsylvania 6-0665.

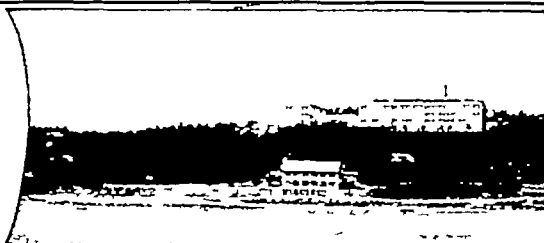
SHERWOOD MANOR—by the Sea

Bermuda's exclusive resort by the sea for those desiring rest, comfort, sports, good food, good beds, fresh spring water and transportation to and from Hamilton a mile away at no extra cost. And for those desiring all these for the least possible expense. Bathing, boating, tennis, golf practice, dancing—all on the premises. Mr. and Mrs. Sherwood is the name—Dutchland Farms Store, Saugus, Mass. and Sherwood Manor, Bermuda.



ELBOW BEACH

Bermuda's only beach hotel with the world's finest surf bathing, providing the beneficial effects of sea and sunshine. Beautiful surroundings conducive to rest and relaxation. Perched high above the beach, excellent accommodations, delicious cuisine and attentive service. For information, rates and reservations—your travel agent, the hotel direct or for definite reservations write our New York Office 51 East 42nd St., Murray Hill 2-8442.



HOTEL LANGTON

Offering a wide diversity of entertainment and recreation, fresh food products from its own extensive gardens and dairy farm, as well as every assistance in making arrangements to give guests the maximum enjoyment and satisfaction while visiting Bermuda. Reasonable tariffs. Write direct for further information and rates or consult your nearest authorized travel agent or J. J. Linnehan, Suite 1230 R.C.A. Bldg., Rockefeller Center, Circle 7-5679.

INVERURIE

Right on the water's edge. Splendid food and service. A wealth of facilities for every sport you can imagine. Famed Marine Terrace, dancing to enchanting music, good times ashore and afloat, and so reminiscent of an English Inn. Whether it's to relax or lead a gay life, you'll find kindred spirits at the Inverurie. Apply direct to J. Edward Connelly, Manager or your local travel agent. Bermuda Hotels Inc. 500 5th Ave. New York N.Y. Pennsylvania 6-0665.



BERMUDA HOTELS ASSOCIATION

See you saw it in the "July 1, 1936 issue of the N.Y. State J.M."

Despite the fact that the definite dates for the musical program have not yet been set, scores of inquiries have been received for tickets. With an all Beethoven and an all Wagner program already listed as definite parts of the festival, plans are in the making for an outdoor presentation in the City Stadium situated on Deal Lake near the Boardwalk. The concerts are being arranged under the direction of Joseph A. Fuerstman, Newark Concert Manager, who is negotiating with leading conductors throughout the country for appearances here.

With a gala program of resort activities under way in full swing, City Officials and hotelmen are busily engaged acting as hosts to a record number of conventions entertaining here during the best ten year period.

The Veterans of Foreign Wars are now bringing to a close their annual conclave with more than ten thousand members and delegates participating. The New Jersey State Order of DeMolay, Junior Masonic Organization, are also winding up their annual convention, while on July 8th, the New Jersey Association of Townships convene here in the North Solarium on the Boardwalk. Other organizations which will be here during the coming weeks are the Prudential Life Insurance Company on July

16th, and the New Jersey State Council Master Decorators on July 22nd to 24th

* * *

German Cookery B A's Ready for Olympics

While "tame wild boar, Heidelberg fashion," pea soup with pigs' ears, Knoedel, Rothenburger pork chops, Apfelkuchen mit Schlagsahne and a thousand other "Spezialgerichte" are the culinary delight of foreign visitors in Germany and have established the international reputation of German cooking, it is realized that among the record number of guests from abroad during the Olympic Games, there will be quite a few who may want something else. After all, not everyone can be expected to eat abroad as those abroad do. There are some who will insist on pork and beans, New England dinner or chicken southern style. The German culinary fraternity have decided that they shall have it, and have it the way mother makes it. And this does not only go for Berlin and the other big cities, or the international resort hotels. It goes also for the little town and for the country inn.

Famous chefs of ten countries, including the

(Continued on page xxix)



The ADMIRAL CAPE MAY, N. J.

The largest and only fireproof hotel in this popular resort 90 minutes from Philadelphia 3½ hours from New York. Directly on the ocean. All outside rooms. Outdoor pool. Cabanas.

**SERVING A
DISTINGUISHED CLIENTELE**

CLIFFORD MARSHALL, Resident Manager

Special July Rates

American and European Plan

Direction of ALFRED PALMER, formerly of The Astor, N. Y. and The Willard, Washington D. C.

(Continued from page xxv)

United States, have taught the cooking of their countries to their German colleagues in the National Gastronomical School in Frankfurt. Courses in international cooking in twenty different parts of the Reich have been attended by thousands of wives and daughters of Germany's collective Mine Host. Not that they have to learn how to cook. But they go from their home-town in Western Germany to a cooking course in Eastern Germany, from the Bavarian Alps to the seashore, to learn to make the favorable dishes of the other parts. And they all learn the secrets of the menus of foreign countries.

Each course lasts from 10 to 14 days and costs 50 Marks. They are given during the slack season. After graduation with a certificate, the majority of the participants enter an advanced course in Berlin. So great has been the response, especially from the 190,000 smaller inns and hostels of the country, there is no doubt that this year's experiment will become a permanent institution. In this way, as in many others, the Olympic Games of 1936 will mean additional pleasure for foreign tourists in Germany for many years to come.

* * *

Rail-Water Tours Prosper

Figures made available today (June 11th) by W. B. Wheeler, Passenger Traffic Manager of the Grace Line, reveal that travel by rail and water from coast to coast of the United States continues its spectacular advance.

The rail-water circle tour idea put into practice in 1931 by the Grace Line in conjunction with every important railway system in the United States and Canada, from the outset proved a producer even during the leanest years of the depression. Figures recently compiled by the Line show that six times as many passengers made the trip in 1935 as did in 1931 and the increase in the sale of railroad transportation was correspondingly large.

The Grace Line offers two rail-water circle tours, one to California, one to Mexico. In the case of the latter, the traveller is carried by rail from his or her home town in New York, thence by steamer through the Panama Canal via the Spanish Americas, to Mazatlan, Pacific sea-gate to Mexico. At Mazatlan, rail transportation is provided to Mexico City via Guadalajara and back again to the traveller's starting point.

The traveller whose choice falls upon California need only indicate to his local railroad ticket agent what scenic section of the United States or Canada most attracts him and what

(Continued on page xxv)

2200 Feet Up in the Mountains

A restricted mountain resort only 3 hours from New York—yet with an altitude of 2200 feet. Cool and healthful climate. You'll sleep under blankets every night of the summer. The INN enjoys a splendid reputation for the excellence of its food and charming, congenial atmosphere. A vacation spot amid surroundings of great scenic beauty.

All sports—June to October 1st



SQUIRREL INN

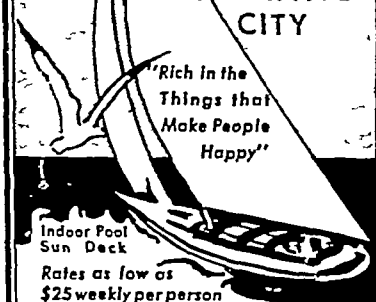
Twilight Park

HAINES FALLS, N. Y.

In the Rip Van Winkle Country



Set Sail for
HOTEL MORTON
ATLANTIC CITY



*"Rich in the
Things that
Make People
Happy"*

Indoor Pool
Sun Deck

Rates as low as
\$25 weekly per person
AMERICAN PLAN (with meals)

Bell & Cope
OWNERSHIP MANAGEMENT
"Come Down and Rest Awhile"
500 FEET from BOARDWALK and STEEL PIER

In an atmosphere of
QUIET DIGNITY



Where best defines the guests
 the rooms the cuisine the service

Where right ' describes your
 selection of a hotel the conven-
 iences the atmosphere the rates

The
ASBURY-CARLTON
 at
ASBURY PARK, N J
 H S JACKSON MANAGER

It's cool at

BLOCK ISLAND, R. I

Spend your summer's outing here situated 15 miles from the Mainland off Rhode Island Coast. Two daily boats from New London, Providence and Newport.

SPRING HOUSE

An attractive hotel every room with bath or running water All rooms have telephones Orchestra, dancing afternoons and evenings Block Island is headquarters for the Atlantic Tuna Club Finest surf bathing on the coast. Tennis, motoring golf, flying, fishing

For further information write

E. R. PAYNE, Manager, Block Island, R I

GOING AWAY?

— let
the JOURNAL
Travel Dept
help you!
No
obligation!



Welcome! **Physicians**

When you come to Atlantic City, make your headquarters at the largest hotel nearest the auditorium • The Ambassador • You'll be adding hours of pleasure and enjoyment to your stay by being so close to everything that's going on • And the Ambassador is Atlantic City's finest hotel, located directly on the boardwalk with most guest rooms facing the Atlantic • You'll find everything you want at the Ambassador comfortable rooms at moderate rates fine restaurants • indoor swimming pool and other recreational facilities spacious sun decks and public rooms • The entire hotel has just been redecorated • May we make a reservation for you now?



The AMBASSADOR Atlantic City
 WILLIAM HAMILTON, Managing Director

(Continued from page xxix)

port he wishes to leave or enter on the sea half of his voyage The rail-water ticket does the rest.

On the sea portion of both cruises, transportation is provided on one of the Grace Line's three new Santa ships in the Central America and California service These fine vessels visit Colombia, Panama, Costa Rica, El Salvador, Guatemala, Mexico and Cuba (eastbound) and their schedules are so arranged as to permit of shore trips varying in length from 6 to 24 hours The land portion of the California cruise offers not only the great commercial centers of the United States and Canada but the magnificent National Parks which distinguish the west, such as Zion, Estes, Glacier National Park, Grand Canyon, Yosemite and Yellowstone and the Carlsbad Caverns of New Mexico, depending on the rail route selected. Stop-overs are allowed

The Mexico cruise, perhaps the most impressive business getter of recent months, offers not only the manifold attractions of Mexico City itself but Taxco, Cuernavaca, Puebla, San Juan Teotihuacan and other spots daily growing more famous as objectives of travel

It is felt not only by the Grace Line but by the railroads that the rail-water circle tour idea is solving the problem of selling travel to the average American, and the increasingly enthusiastic response certainly proves this

* * *

Engine Whistle Invented by English Organ-Builder

Not many know that the world's first locomotive whistle was invented over a century ago by an English organ builder, at the direction of George Stephenson, inventor of the locomotive. One of the early trains on the Leicester & Swannington Railway, which began operation in 1832, ran into and wrecked a market cart. Up to that time there was no way in which a locomotive could signal its approach Stephenson, looking ahead as always, at once commissioned an organ builder to make a "steam trumpet" out of an organ pipe and this, the common ancestor of all locomotive whistles, proved effective.

Recently, a 15-foot length of rail, designed by Stephenson over a hundred years ago for the Leicester & Swannington Railway, now part of the London, Midland and Scottish System, was presented to the South Kensington Science Museum by Sir Josiah Stamp, Chairman of the London, Midland and Scottish Railway

The rail, which once formed part of the Leicester & Swannington track, was found at Ashby-de-la-Zouche, is of the "fish-bellied" type, and weighed originally 35 lbs per yard

A RESORT GEM

Doctors who like the Adirondacks will be glad to know about Hollywood Hills Hotel at Old Forge. This is a new and really comfortable resort hotel. *Every* room has a private bath (tub and shower), large cedar lined closets, finest beds, steam heat. Beautiful estate of 15,000 acres All sports Nightly dancing No hay fever Restricted clientele Rates from \$7 daily, including meals. New York office, 500 5th Avenue, Chickering 4-6468 Kenneth Arnold, Manager

**HOLLYWOOD HILLS
HOTEL
OLD FORGE, N. Y.**

THE FINEST COST NO MORE!

•
Attractive
Daily,
Week-end
and
Weekly
Rates
•

—than the ordinary when you come to Atlantic City's luxury hotel—beautiful Colton Manor Breeze-swept "Ship's Deck"—every sport, game, pastime—delicious, abundant meals Sea water baths Bathing direct from hotel Moderate rates Booklet

Colton Manor

One of Atlantic City's Finest Hotels
Pennsylvania Ave Paul Auchter, Mgr

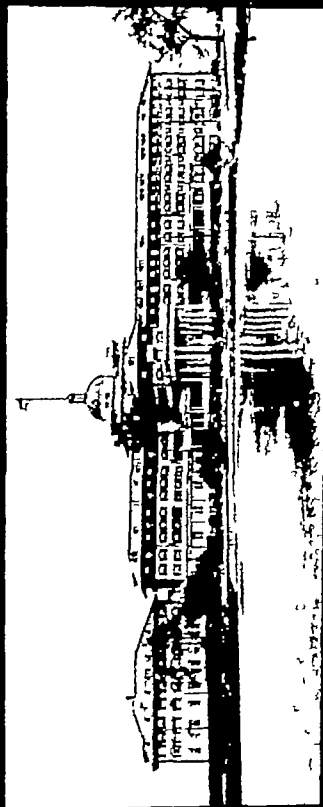
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Restricted Resort

Directly on the Ocean

An Outstanding Summer Hotel

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President



Bar · Grill · Dancing
Ocean · Pool · Bathing
Golf · Tennis · Fishing
Only 58 Miles from New York

James J. Farrell
Manager

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Most Medical Men

—prefer the Lenox because it is so convenient to the hospitals and medical centers. They also like its homelike atmosphere, large comfortable rooms, good food and fine service.

Note these Rates—Why Pay More?

Single \$1.50 to \$3.00

Double \$2.50 to \$5.00

Family Suites \$5.00 up

Write for free A.A.A. road map, also our folder with map of downtown Buffalo

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140 North St. near Delaware

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CLARENCE A. MINER, President

THE Robt. Morris HOTEL 17th, Arch & The Parkway PHILADELPHIA

"Refinement with Economy"

"Comfort with Convenience"

Every room an outside room with private bath and running ice water. Attractive furniture. Unusually comfortable beds. RADIO IN EVERY ROOM

Rates from

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EXCELLENT DINING ROOM
MODERATE PRICES

Rt 9290

Louis E. Pike, Mgr

CLOSE TO PENNA. R. R. STATION

(Continued from page xxi)

port he wishes to leave or enter on the sea half of his voyage. The rail-water ticket does the rest.

On the sea portion of both cruises, transportation is provided on one of the Grace Line's three new Santa ships in the Central America and California service. These fine vessels visit Colombia, Panama, Costa Rica, El Salvador, Guatemala, Mexico and Cuba (eastbound) and their schedules are so arranged as to permit of shore trips varying in length from 6 to 24 hours. The land portion of the California cruise offers not only the great commercial centers of the United States and Canada but the magnificent National Parks which distinguish the west, such as Zion, Estes, Glacier National Park, Grand Canyon, Yosemite and Yellowstone and the Carlsbad Caverns of New Mexico, depending on the rail route selected. Stop-overs are allowed.

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**HOLLYWOOD HILLS
HOTEL
OLD FORGE, N. Y.**

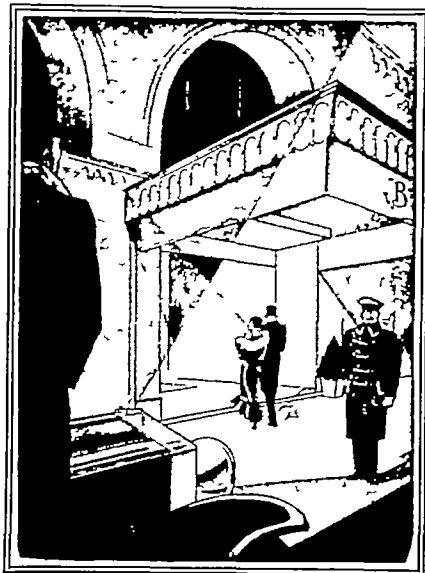
THE FINEST COST NO MORE!

— than the ordinary when you come to Atlantic City's luxury hotel—beautiful Colton Manor. Breeze-swept "Ship's Deck"—every sport, game, pastime—delicious, abundant meals. Sea water baths. Bathing direct from hotel. Moderate rates. Booklet.

•
Attractive
Daily,
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and
Weekly
Rates
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Colton Manor

One of Atlantic City's Finest Hotels
Pennsylvania Ave Paul Auchter, Mgr



A FAVORED RESIDENTIAL HOTEL

In the Smart East Fifties

SINGLE \$4 00 DOUBLE \$6 00
FEATURING

2-ROOM SUITES \$8 00 DAILY

For permanent occupancy one to five rooms (furnished or unfurnished) generous closets and perfectly equipped serving pantries. Special monthly and yearly rates.

Newly redecorated Restaurant and Duplex Cocktail Lounge air-cooled. Excellent cuisine a few Minutes' walk from Grand Central, Rockefeller Center, the Theatre and Shopping Districts.

**The
Beverly**
A RESIDENTIAL HOTEL

125 East 50th Street, New York City
William A. Buescher, Manager

Austria Among Foremost Tourist Countries

Statistics recently issued by the Austrian Federal Ministry for Commerce and Traffic confirm the impression that Austria now ranks among Europe's foremost tourist countries. In the year 1934-35 foreign visitors numbered 669,777, 34% larger than that of the previous year. The fact that the increase during the main tourist season amounted to 64% indicates that foreign visitors to Austria are mainly pleasure travelers. The Austrian figures are higher than those of any other European country that is at all comparable. 23,800 of the visitors came from the Americas, which is an increase of 24% in this branch of the tourist business. The average American tourist spends eight days in Austria and goes to Vienna, which means that he traverses the entire country. The increase in winter sports visitors from the United States during the winter 1935-36 was 60%. All evidence tends to indicate an even greater percentage increase in traffic from the United States to Austria during the coming summer, for on May 1, 1936, four and a half times as many Salzburg Festival tickets had been sold to American buyers as were sold to Americans in the entire season last year.

* * *

Elaborate Ceremony and Festival at Assisi and Siena

A crowded event calendar awaits the tourist to Italy in July, according to George C. Gaede, passenger traffic manager of the American Export Line. The opening of the season finds simultaneous events occurring in different parts of the country. On July 2, is the unique spectacle of the Palio Races at Siena. Also on July 2, mystical Assisi celebrates the Feast of the Pardon. Both events, unique and divergently interesting, allow the visitor the matter of personal choice, in selecting the event that offers the greatest appeal.

The spectacle of the Palio at Siena presents a vast pageant that converts this quaint Italian city back to the Middle Ages. On the day of the festival the decorations are elaborate. The facades of palaces and houses, the balconies, the loggias and windows as well as the streets, are a multicolored display of decoration.

Amid the fluttering of flags emerge figures that present the costumes of ancient times. Heralds on horseback, mace-bearers and trumpeters of the Palace, followed by a cortege of personages dressed in a by-gone period. Captains, drummers and standard-bearers, pages trooping beside the jockeys on parade-horses present a wealth of color. The theatrical effect

(Continued on page XXXII)

ATLANTIC CITY AT ITS BEST— The hotels **MADISON** and **JEFFERSON**

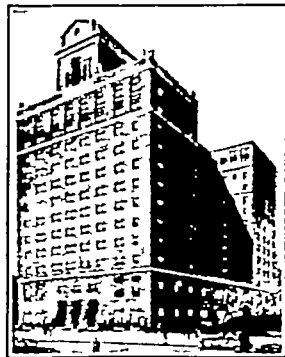


More than just a place to leave your baggage—cozy rooms, excellent cuisine and service, sun decks, solariums, and the nicest people as fellow guests will make you feel that here you are truly enjoying the World's Playground at its best.

OWNERSHIP MANAGEMENT

For information, rates and literature, write—

John R. Hollinger Gen. Mgr. Eugene C. Fetter Res. Mgr.



On the Cedarshore Private Beach

You'll be eager to join the jolly sailing parties on the Bay fishing excursions for marlin and tuna water carnivals bathing, boating, loafing on the sand. Plenty of fun for landlubbers too—golf,

riding tennis entertainment through the season, capped by gala dances in the Marine Grill over the water. Safe beach and playground for children. Cool nights, cozy rooms, delicious food.

G. ELLIOTT MORRISON, Owner-Mgr.

Write for folder and attractive rates today!
N. Y. Office 300 Madison Ave., VAn. 3-7200



For a memory - lingering holiday, week-end, or season, come to

Restful nights—modern equipped, quiet and airy bedrooms. Healthful days—bathing, boating, fishing, golfing, etc.

The COLONIAL
On the Boardwalk
CAPE MAY, N. J.

Fine meals—plenty of fresh foods with special attention to dietary requirements. Courteous service and moderate rates.

SEE WEST POINT . . .



the military training school for the flower of American youth experience the thrill of watching the Drills, Parades, and many activities of the Cadets,—Play Golf—and go horseback riding through Bear Mountain Park,—while you stay at this beautiful Treadway Inn with its colorful military atmosphere

The THAYER-WEST POINT

On the U S Military Reservation at WEST POINT, N Y



NEIGHBORS!

If you want to be just around the corner from the famous Radio City and only a few steps from the smart shops and theatres, then come to the VICTORIA, one of New York's newest hotels. Enjoy the finest of food too, and conviviality at the newest of bars, get the swing and rhythm of Modern Manhattan!



Tariff
Reasonable

Hotel AT RADIO CITY
VICTORIA
7th AVE at 51st ST, NEW YORK
JOHN L. HORGAN MANAGING DIRECTOR

CRAWFORD NOTCH

within the shadow of
MT. WASHINGTON
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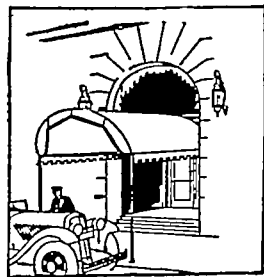
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(Continued from page xxxii)

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JUNE "SAILORS" aboard Grace Line steamers bound for Panama, Peru, Columbia, Ecuador, and Chile included Dr and Mrs A. S. McQuillan of New York.

SAILING TO BERMUDA on the Furness Bermuda's *Monarch of Bermuda*, we found Dr and Mrs Lawrence K. Lunt of Massachusetts, and aboard the *Queen of Bermuda*, Dr and Mrs J R Montrieth of Pennsylvania, Dr and Mrs F Beitler of Maryland, and Dr and Mrs F Ogden from the same state.

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French Claret	Claret Glass	120 "	81
French White	" "	120 "	95
Mosel	" "	120 "	73
Rhein	" "	120 "	83
Champagne, sweet	Cham. Glass	135 "	161
Madeira	Sherry Glass	30 "	39
Port	" "	30 "	45
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Cognac	Cordial Glass	20 "	78



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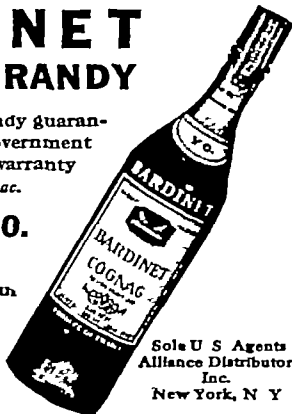
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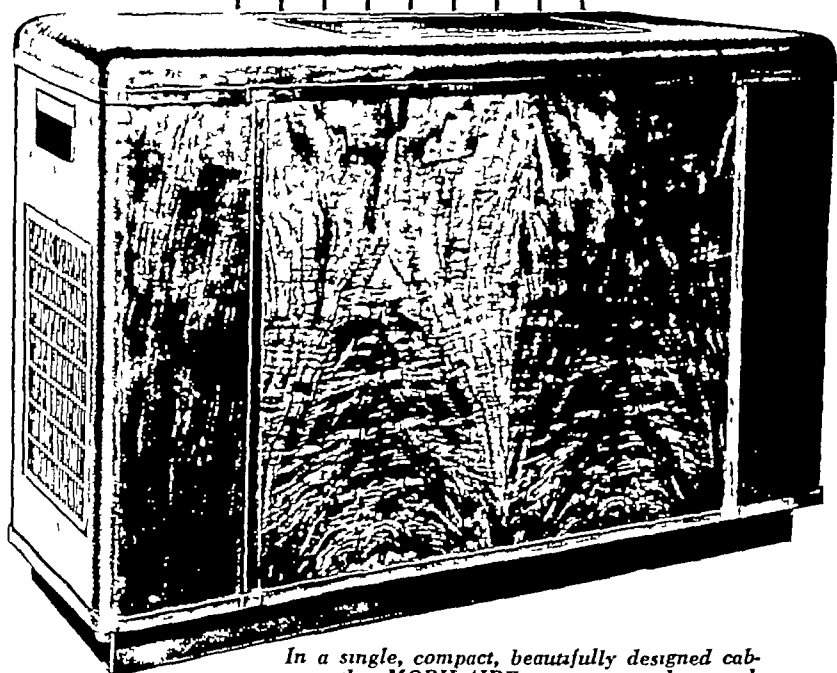
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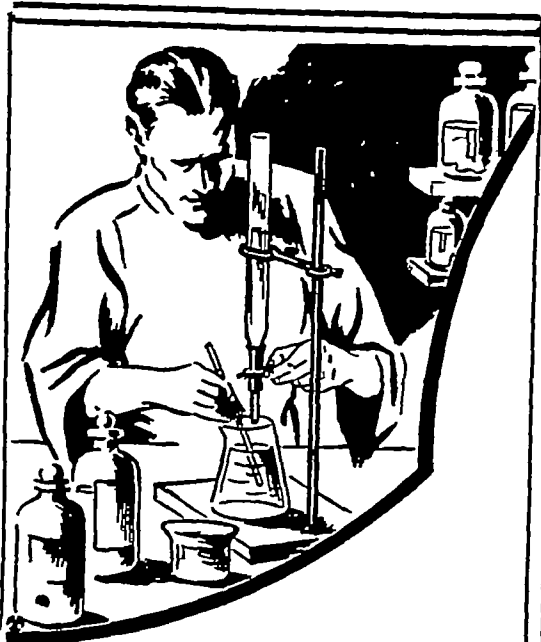
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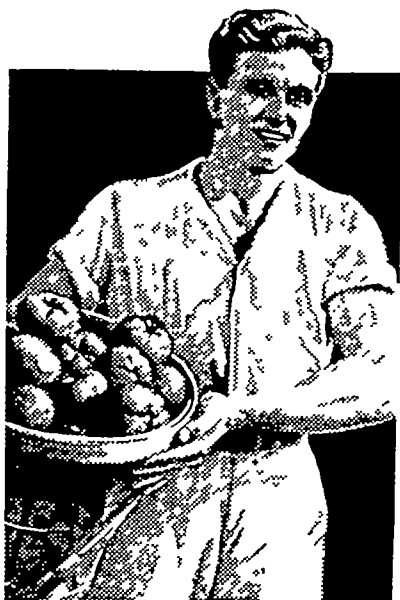
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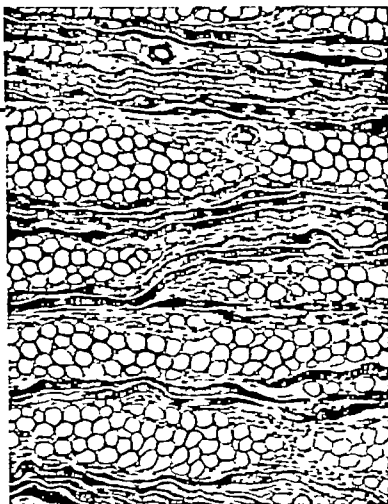
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⁽¹⁾ Tripoli, McCord & Beard, J. A. M. A. Nov 24, 1934

⁽²⁾ W. M. Boothby, Arch. Int. Med. 53, 39-45

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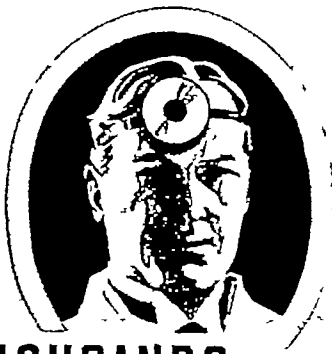
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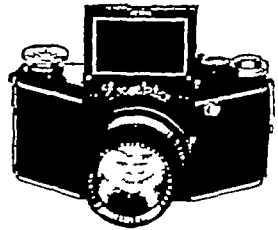
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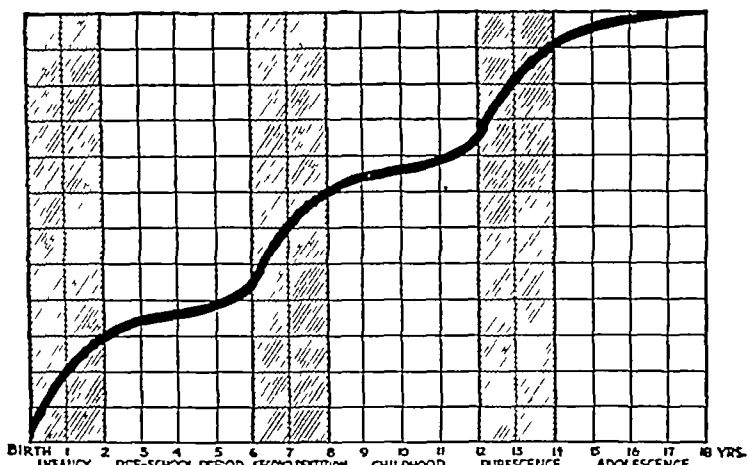
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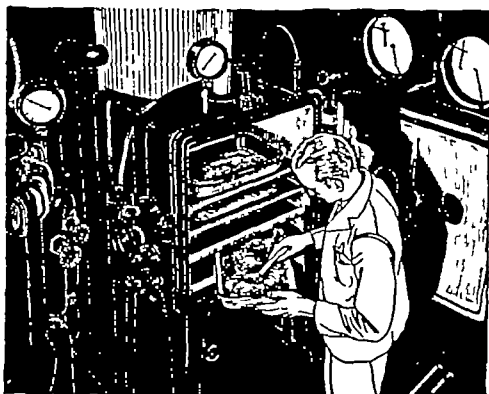
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ACUTE HEMORRHAGIC PANCREATITIS**Causes of—Symptoms and Treatment**DEAN LEWIS, M D, *Baltimore, Md**Surgeon-in-Chief, The Johns Hopkins Hospital*

Interest in the surgery of the pancreas has been aroused by contributions which have been made recently. Acute pancreatitis remains a serious surgical problem. The diagnosis is often made with difficulty, and the results of surgical intervention are not encouraging. Many different theories have been advanced as to why hemorrhagic pancreatitis develops. Dettmer, after considerable experimentation, reached the following conclusions:

1 When the outflow of pancreatic secretion from the gland is disturbed by closure of the pancreatic duct, with or without simultaneous interference with the gland, changes occur in the intrapancreatic ducts and parapancreatic fat which resemble those described by Balser and Langerhans as multiple fat necrosis.

2 The changes in the fat, described as fat tissue necrosis, are caused by fat ferment and not by trypsin.

The experimental results obtained by Körte led him to the following conclusions:

Necrosis of fat tissue may be produced by injuries and inflammation of the pancreas artificially produced, especially by solution of continuity and implantation of excised pieces of glands. The results did not always occur, but only in a portion of the cases. The alterations obtained, however, as Dettmer's experiments also teach, have but a faint resemblance to the changes observed in man. The tendency to hemorrhage, so frequently noticed in the latter, was entirely lacking in experimental fat necrosis.

This statement is especially significant and will be referred to later.

Flexner in 1900 demonstrated that hemorrhagic pancreatitis could be produced by hydrochloric acid, sodium hydroxide, and formalin when injected into the pancreatic duct of dogs. Opie produced pancreatitis by injecting bile into the ducts and since his work, retrojection of bile into the pancreatic duct has been regarded as the most acceptable etiological factor in the production of the disease. As gall-stones, either free or impacted, have frequently been found in the common duct in cases of hemorrhagic pancreatitis, they were regarded as the cause of the retrojection. We shall see later that stones are not so frequently associated with the disease as formerly thought.

As just stated above, Körte believed that the tendency to hemorrhage—so pronounced in pancreatitis in man—is lacking in experimental work. Rich, in a recent article entitled "Pathogenesis of Acute Hemorrhagic Pancreatitis," has added many new observations to the subject. Rosenbach published a paper twenty-five years ago in which the peculiar necrosis of blood vessels found by Rich in the autopsy material of the Johns Hopkins Hospital was described. This necrosis of the blood vessels was observed in the vessels of a dog's pancreas, into which suspensions of streptococci or bile containing commercial trypsin were injected.

This vessel necrosis will be described before the change which leads to the accumulation of the secretion in the ducts is mentioned. Rich states that the recognition of the constant occurrence of this

peculiar, rapid necrosis of the walls of the pancreatic vessels which may be found in man and experimental animals removes all mystery as to the immediate cause of the extensive, massive hemorrhages that occur. Some substance which exerts a powerful necrotizing action upon the walls of the arteries and veins is freed into the interacinar spaces in hemorrhagic pancreatitis, the hemorrhage following the rupture of a necrotic area in a blood vessel or vessels. Regardless of the nature of the immediate exciting cause, Rich felt justified in believing that the vascular change was produced by some substance liberated by the pancreas, and that this substance was trypsin. He found that pancreatic juice, collected from the pancreatic ducts before it comes in contact with duodenal contents, has properties which vary considerably, depending upon the conditions under which the juice is secreted. There is no correlation between the power of the duct juice to produce fat necrosis and the vascular lesion.

In the human cases of hemorrhagic pancreatitis the vascular change is peculiar and specific, and is not mentioned by those who have experimented with the disease extensively and studied the disease in man. The adventitia of the artery or vein involved may appear condensed and takes a pink stain. It may contain leukocytes or necrotic cells. The muscle fibers of the media swell and are at times separated by a pink-staining fluid, or by spaces in which nothing stains. The nuclei become shrunken, pyknotic, and often karyorrhetic, and polymorphonuclear leukocytes may be found in the lesions in the early stage. The internal elastic lamina loses its undulations and takes on a swollen appearance. Individual fibers split off, so that the elastic membrane appears frayed. Breaks appear in the membrane, or it ceases to take the stain, appearing as though it were completely dissolved. Finally the nuclei fail to stain and the necrotic tissues of the wall stain homogeneously pink with eosin and hematoxylin and subsequently melt into a pink-staining or sometimes bluish-hyaline mass. The first change in the media occurs in the outer layer, the muscle fibers of which may be necrotic, while those near the intima remain intact. The damage in most cases proceeds rapidly to involve the

entire thickness of the vessel wall, which is followed by destruction. A part of the circumference of a vessel may be destroyed. This usually happens when the larger vessels are involved. When the smaller vessels are affected an entire segment of the artery may be destroyed. When the smaller arteries and arterioles have become necrotic or hyalinized, they are often indistinguishable in appearance from the arterionecrosis and hyaline arteriosclerosis found in hypertension and arteriosclerotic nephritis. Rich, to his astonishment, found that complete hyalinization occurred within so short a time as twenty-four hours.

Obstruction of the pancreatic duct system with rupture of some of the ducts may be produced apparently in a number of different ways, cases of obstruction due to gall-stones, pancreatic calculi, *Ascaris*, diverticula, etc. having been observed. Rich believes that the most common cause of obstruction is metaplasia of the duct epithelium, this not to the exclusion, however, of other causes. This metaplasia was first described by Priesel, Baló, and Ballon. The metaplasia is characterized by a local proliferation of the duct epithelium, which in the area affected loses its cuboidal character and becomes transformed into the transitional or basal type of epithelium. As the result of this metaplasia, masses of cells are formed which may partially or completely obstruct the lumen of the duct. This process affects principally the small branches of the duct system. Blockage of the duct may cause atrophy and disappearance of an acinus. Scar tissue then forms, and to this picture the term chronic or interstitial pancreatitis is applied. In citing some of the histories it will be seen that milder attacks undoubtedly preceded the severe one, for which an operation was performed, or terminated fatally. Rich examined histologically the pancreases of 150 consecutive cases removed from individuals of twenty-five years of age and upward. These cases were unselected, the patients dying of various causes other than disease of the pancreas. The only cases omitted from the consecutive series were those in which the pancreas was so autolyzed as to interfere with the study. Among the 150 cases metaplasia of the pancreatic duct epithelium was found in twenty-eight

or 186 per cent. Localized dilatation of the terminal ductules was also found in twenty-eight cases, or 186 per cent. Localized dilatation of the terminal ductules or acini was found in twenty-seven of twenty-eight cases, and in eleven additional cases in which the cause of the obstruction could not be discovered in the section of the pancreas available for study. Körte, many years ago, made the statement that "a slight degree of necrosis of fat tissue is not infrequently found in the pancreas and in the peritoneal fat in the absence of other alterations of the gland and without the production of morbid symptoms." Fat necrosis has also been seen during life without evident disease of the gland, and after a time has disappeared. Specimens of the pancreas are not infrequently seen in which this had evidently preceded the fatal event and left unmistakable scars in and about the pancreas. The results of the rupture of the acini depend upon the character and potency of the pancreatic juice and the extent of the changes in the vessels with which it comes in contact, and naturally upon the size of the vessels involved. If the patient has hypertension, which was noted in four of the twenty-four cases in the Johns Hopkins series, the extent of the damages due to more extensive hemorrhage and destruction will be greater. The reasons for the extensive hemorrhage, so frequently seen in man, are satisfactorily explained by the specific changes in the vessels observed by Rich. The leak of the pancreatic juice is also explained by the blockage of ducts resulting from metaplasia of the epithelium. This explains quite satisfactorily the definitely localized fat necrosis and the occurrence of pancreatitis when none of the ordinarily cited etiological factors can be found.

The symptoms of acute pancreatitis are quite variable, depending a great deal upon the extent of the hemorrhage. I shall cite three histories which indicate how the symptoms may vary.

A male, aged thirty-seven years, was admitted to the emergency room of the Johns Hopkins Hospital in May 1935. He gave an indefinite history of repeated attacks of pain in the epigastrium over a period of ten years. These occurred after meals. One week before admission to the hospital the patient experienced severe epigastric pain

which recurred on the night of admission. The patient had vomited but once. On admission marked epigastric tenderness was found, muscular rigidity, elevation of temperature, and leukocytosis. The patient was taken to the operating room. When the abdomen was opened blood-tinged fluid escaped. Hemorrhagic changes were found in the mesentery of the transverse colon and areas of fat necrosis in the gastrocolic omentum. The pancreas was unusually hard. A cholecystgastrostomy was performed and drains inserted to the head of the pancreas. The patient was subsequently discharged well and followed in the outpatient department.

This patient, judging from the history, had had attacks on several occasions when small pancreatic leaks occurred. Clinically these consisted of attacks of epigastric pain which were definitely related to the taking of food. In many instances the severe attacks are related to the ingestion of food which increases the flow of pancreatic juice.

Another case occurred in a colored man aged thirty-six years whom thirty-six hours before admission to the hospital suddenly experienced cramp-like pains in the lower abdomen, so severe that they doubled him up. Home remedies were tried without relief. He began to vomit bile and the abdominal pain increased in severity. The patient appeared very ill when admitted to the hospital. The temperature was 102.4° F, pulse 140, and leukocytes 17,000. The patient was taken to the operating room at once. A low right rectus incision was made and a relatively normal appendix found. On exploration a red, gelatin-like mass was found retroceally. On further exploration a mass was found at the site of the pancreas. This mass was fixed. A right high rectus incision was then made and it was found that the duodenum, stomach, and pancreas were matted together, forming a dense white, wax-like mass. Drains were placed about the pancreas. Areas of fat necrosis studded the omentum. Following operation the patient did not do well. On the third day he began to cough up mucopurulent material streaked with fresh blood. The temperature rose to 106.8° F, and the pulse to 160. Autopsy revealed acute hemorrhagic pancreatitis with peritonitis and multiple pulmonary emboli.

The following history would seem to indicate that numerous leaks of pancreatic juice occurred from time to time which caused mild symptoms.

Patient gave history of having had sev-

eral attacks of acute cramp-like pain in and about the umbilicus which lasted for a few hours. When these subsided the patient felt well. Three days before admission to the hospital he had an attack of abdominal pain which became progressively more severe. The patient became jaundiced and the temperature rose to 103° F. The stools became light-colored and for two days the jaundice became deeper. The pain localized in the right upper quadrant and epigastrium. At operation the head of the pancreas was found enlarged and of stony hardness. The parapancreatic tissues were studded with areas of fat necrosis. A cholecystectomy was performed and one month later the patient was discharged greatly improved.

It will be seen from the few cases which have been cited that the symptoms may present many degrees of severity. The severe cases are usually marked by considerable hemorrhage which is dependent upon the size and number of the vessels, whose walls are injured by the escaped pancreatic juice. The hyperacute cases are fulminating and almost always fatal. Clinically these cases begin with severe pain, abdominal rigidity which is marked, cyanosis, and a rapidly falling blood pressure. The patient presents all the symptoms of neurogenic shock. Some patients may die early in the course of the disease, while others recover from the primary shock and succumb thirty or forty hours later. Archibald suggests that death at this time is probably due to the absorption of histamine derived from the proteolytic action of activated pancreatic juice upon pancreatic cells which have been killed by the contact of bile or duodenal contents. In another group the symptoms are not so severe and the patient succumbs later to toxic absorption, to complications, or eventually recovers.

At times when the patient enters the hospital a diagnosis of intestinal obstruction may be made. In some cases a diagnosis of gall-stone colic is made. Recovery from such an attack is delayed, and when an operation is performed, fat necrosis is found and blood escaping through the foramen of Winslow into the greater peritoneal cavity. Patients have recovered from the acute attacks and eventually have developed pseudocysts of the pancreas. When one recalls the number of cysts of the pancreas that are encountered one is forced to the conclusion that mild degrees

of acute pancreatitis followed by recovery must not be uncommon.

Statistical studies which have been made frequently indicate how unsatisfactory the operative results in the treatment of acute pancreatitis are. Broeg found that the mortality was seventy-eight per cent in 116 cases operated upon before 1910, and sixty-nine per cent in 119 cases operated upon after 1910. Schneider has published statistics upon 1,278 cases operated upon during eight years. In returns from questionnaires sent to one hundred surgical clinics, the total mortality was 51.2 per cent. Guleke's figures published in 1924 indicate a mortality of 52.2 per cent, while Korte's figures published in 1898 indicated a mortality of sixty per cent. Such figures do not indicate any great improvement in results over a number of years. In the Hopkins Hospital the mortality following operations for pancreatitis has been 45.4 per cent.

Experience with acute pancreatitis operated upon in the interval suggests that if one could make a differential diagnosis between peritonitis due to perforation and acute pancreatitis that it would be well to postpone immediate operation.

In the *Medizinische Klinik* of November 16, 1934 are printed the answers to a questionnaire dealing with acute pancreatitis. Walzel, of Graz, gave the following results in the treatment of seventy-six cases:

From 1926-1928 thirty cases were treated. Twenty-six died, giving a mortality of 86.67 per cent, four recovered, a percentage of 13.33 per cent. From 1929-1934, forty-six cases were operated upon, thirteen died, a mortality of 28.26 per cent, thirty-three recovered, a percentage of 71.74 per cent.

The following conclusions were reached by Walzel:

In doubtful cases in which perforation of a peptic ulcer, appendix or gall-bladder cannot be excluded an exploratory laparotomy should be performed. If on exploration acute pancreatitis is found the operation should be stopped. The operation should be continued only if a stone in the common duct is found (choledochotomy and drainage), or if there is found an acute phlegmonous cholecystitis, then a cholecystostomy should be performed.

Handling of the pancreas in the early

stages is to no good purpose. It is even harmful, for the limits of the diseased process cannot be determined macroscopically and the demarcating walls established by nature may be destroyed by rough handling.

The mortality seems to have been lowered by conservative treatment, although it is difficult to determine in any series the number of mild cases. If I could differentiate between perforation peritonitis and acute pancreatitis I would treat the latter conservatively, hoping to be able to perform an interval operation, and the simplest operation possible would be performed.

Rich has pointed out a significant thing relating to certain phases of after treatment. He remarks that Babkin has recently confirmed previous observations that an elevation of blood sugar causes an increased flow of ferment-rich pancreatic juice. Intravenous administration of

glucose solution to patients with hemorrhagic pancreatitis, a not infrequent procedure, might increase the damage by stimulating further flow. In this connection Rich cites an interesting case.

A girl, who was found later to have a metaplasia of the ducts causing obstruction, was accidentally burned while in excellent health. She was brought to the hospital and given a large amount of five per cent glucose solution intravenously. She died twelve hours after the intravenous injection was made, at autopsy hemorrhagic pancreatitis was found.

Such may have been a coincidence, but it is well to remember that there may have been a definite relationship between the pancreatitis and the intravenous injection. In all cases of hemorrhagic pancreatitis this possible relationship should be kept in mind and glucose solution should be employed with caution, and only when there are definite indications.

WARNING TO PHYSICIANS

TREASURY DEPARTMENT
FIELD FORCE
Division of Secret Service
New York District

July 8, 1936

Dr. Peter Irving,
Secretary, State Medical Society,
New York, N. Y.
Sir,

Confirming telephone conversation of even date, this Office would appreciate it if you would arrange to have published in the "JOURNAL OF MEDICINE" the following warning to the members of your profession:

The United States Secret Service warns all

members of the medical profession to be on the lookout for a young American, 22-24 years old, 5' 10" tall, 150 lbs., dark brown hair, who has been passing counterfeit money on physicians. This suspect requests an examination for some ailment which does not actually exist, such as bronchial infection, common cold, etc., and in the past has paid for the examination with a counterfeit \$20 note in each instance. Suspect acts in a manner to imply he resides in the neighborhood of the examining physician. If this man appears he should be detained and a policeman or the Secret Service office should be immediately notified. The telephone number of the New York Office of the Secret Service Division is WHITEHALL 4-4300, Extensions 256, 257 and 258.

Respectfully,

WILLIAM H. HOUGHTON
Principal Operative

LET THE GOOD WORK GO ON

Such a sharp drop was made by the curve for automobile fatalities in eighty-six large cities in the four weeks ending March 14 that it broke through the bottom of the monthly chart issued by the Census Bureau and fell to 168 per 100,000 population as against about 235 in the same period in March, 1935. There were 482 such deaths

this March and 678 a year ago. This figure is the lowest, in fact, for any four-weeks' period in over five years. Looking over the table for individual cities, we find, in our own State, Schenectady, Syracuse, Utica, and Yonkers showing a clean record, with no motor deaths in this period.

BILATERAL PNEUMOTHORAX TREATMENT IN PULMONARY TUBERCULOSIS

Simultaneous Applicability in Ambulatory Cases

RAPHAEL A BENDOVE, M D, *New York City*

Bilateral pneumothorax therapy should no longer be considered an heroic or desperate attempt in the hopeless phthisical case, but should be applied as a treatment of choice in most cases of early tuberculous involvement of both lungs. Recent advancement in the study of pneumodynamics and collapse therapy has brought out the fact that not only is it possible to create a simultaneous bilateral pneumothorax with comparative comfort to the patient, but that if the pneumothorax is selective in type, the patient can carry out useful work without untoward effects.

Only for the first few treatments must the patient be confined to bed, but as soon as the clinical condition allows, the insufflations can be continued while the patient is ambulatory. The *sine qua non* is to conserve enough respiratory capacity in the collapsed lungs. This can be accomplished only by means of a selective pneumothorax which immobilizes the diseased pulmonary tissue without curtailing much of the respiratory function of the healthy portions of the lungs. A knowledge of pneumodynamic principles is essential in order to comprehend the applicability and therapeutic effect of simultaneous bilateral pneumothorax treatment.

Selective Collapse in Bilateral Pneumothorax

When a small quantity of air is introduced into the pleural cavity it will accumulate mostly over the diseased portion of the lung putting it at relative rest, whereas the uninvolved portions of the lung will continue to expand and contract with the respiratory cycle. This phenomenon of selective collapse was first observed by Morgan,¹ and later described by many continental and American clinicians who also indicated the applicability of its principles in bilateral therapeutic pneumothorax.^{2, 3} The injected gas has no true predilection for the diseased tissue, but distributes itself according to

definite pneumodynamic and biophysical laws.^{4, 5} Only a few of the principles governing this selectivity of collapse insofar as it applies to bilateral pneumothorax will be discussed here.

It is easier to shape and mold a plastic body than an elastic body. An elastic element will rebound when compressed, and retract when distended, whereas a plastic substance will stay put in whatever position the external force places it. Normal anatomic lung is elastic, while diseased pulmonary tissue is plastic, particularly caseous areas which are soft and yielding. Consequently, the same intrapleural pressure applied to diseased and healthy lung tissue will give rise to different results, the diseased tissue will remain compressed but the functioning elastic tissue will soon re-expand, provided the pleural pressures do not exceed the intrapulmonic pressures. The *expansile* portion drives the air over the space left by the compressed diseased portion and thus helps maintain the localization of gas over the affected area.⁶ This phenomenon is particularly observed during deep inspiration when the uninvolved portions expand fully and come in contact with the thoracic wall, causing the gas in the pleural cavity to accumulate almost entirely over the diseased territories.

Fig 1, a roentgenogram of a case of the selective type of bilateral pneumothorax, taken during inspiration, illustrates this phenomenon most saliently. The air is accumulated over the upper diseased lobes putting them at relative rest, whereas the lower healthy lobes show inspiratory expansion to almost physiologic limits. This patient was ambulant and practically symptomless when the x-ray was taken, his vital capacity had even increased, as compared with the vital capacity before the treatment had been initiated. Numerous factors enter into the mechanism of this respiratory compensation, such as reduction of toxicity, participation of residual air in the

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vital capacity, vicarious emphysema which develops in the uninvolved portions of the lung, and many others, a detailed discussion of which is given elsewhere.⁷

The development of compensatory emphysema begins very early in the treatment of pneumothorax, provided the heart reserve is adequate, and able to propel per same unit of time the same amount of blood through a reduced pulmonary surface. In describing the circulatory changes in pneumothorax⁸ I indicated how delicate the equilibrium is between the hemodynamics and pneumodynamics, and any undue disturbance in one system will find its repercussion in the other one. The maintenance of the new functional equilibrium between the respiratory and circulatory systems in bilateral pneumothorax is greatly dependent on the development of compensatory emphysema in the healthy portions of the collapsed lungs. These vicariously distended functioning portions of the treated lung have an increased ventilating capacity, and show wide respiratory excursions which can be observed and studied roentgenologically.

Figs 2A and B, are inspiratory and expiratory roentgenograms respectively, of a case of bilateral pneumothorax, the functioning lobes of which show wide, though different ranges of expansion and contraction. On the right side only small amounts of air were necessary to keep the diseased upper lobe at relative rest, and the intrapleural pressures were always left very negative, whereas on the left side larger amounts were necessary to immobilize the more extensive lesion in the upper lobe and the intrapleural pressures were somewhat increased. However, the pneumothorax in both sides was always of the expansile type, i.e., the healthy portions of the lung continued to expand with each inspiration, but, whereas in the right side the expansion was marked creating a spectacular selective collapse, on the left side the selectivity was only relative because of the inspiratory restriction of the functioning lobes. Still, even in such a relative selective type of pneumothorax or differential collapse, the healthy pulmonary tissue asserts its respiratory function, which can be measured roentgenologically by its dif-

ference in size and width during inspiration and expiration.

These physiopathologic and pneumodynamic principles should be kept in mind throughout the management of bilateral simultaneous pneumothorax if the maximum therapeutic results with a minimum risk are to be achieved. Each insufflation of air is given not with the purpose of compressing the entire lung, but to keep only the diseased tissue from to-and-fro motion synchronous with respiratory movement, whereas the functioning capacity of the uninvolved portions is to be spared as much as possible. Obviously, the smaller the affected area and the larger the uninvolved area of the same lung, the better are the chances for a selective immobilization of the diseased portion without encroaching much on the respiratory function of the healthy portions, and vice versa. This is a very important criterion in estimating the indications for simultaneous bilateral pneumothorax.

Management of Bilateral Pneumothorax

Pneumothorax is initiated usually on the most evolutive and affected side, as far as can be ascertained from the clinical

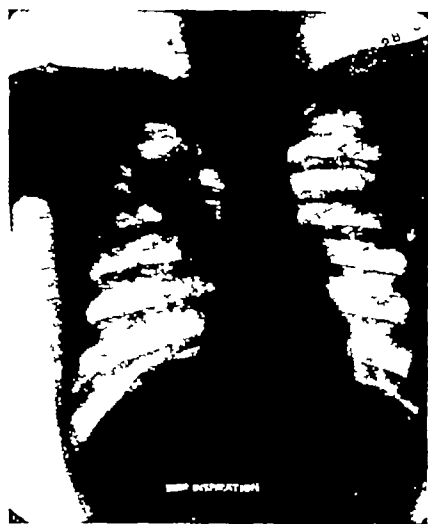


Fig 1 Roentgenogram of case of simultaneous bilateral pneumothorax of selective type, note localization of air over compressed upper diseased lobes with least encroachment on the inspiratory expansion of the lower lobes

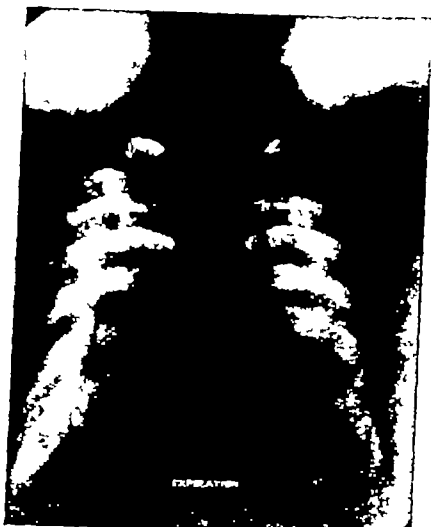
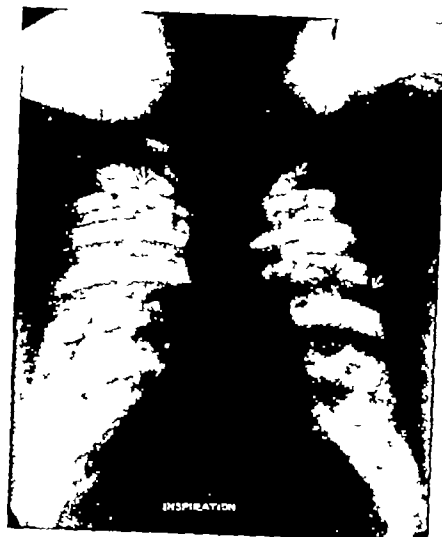
course and serial roentgenograms. The initial amount of air given is 150 to 200 c.c. Wide manometric oscillations indicate, as a rule, a free pleural cavity which is one of the primary requisites for creating a selective collapse. Subsequent insufflations in amount of 200 to 300 c.c. are injected every other or third day for about two weeks, by which time a selective type of pneumothorax should be established. Frequent roentgenoscopic examinations are essential for determin-

ing the extent and character of the collapse and particularly for studying the range of respiratory excursions of the uninvolved portions of the treated lung. If the collapse is of the selective type, a gradual hypotensive pneumothorax may be induced on the other side without much discomfort to the patient. Amounts of insufflation should not exceed 200 c.c. until the selective phenomenon is successfully accomplished on both sides.

The patient should be kept in bed only as long as symptoms of general toxicity persist, such as fever, asthenia, anorexia, etc., which in some cases disappear a few days after the creation of simultaneous bilateral pneumothorax. Local pulmonary symptoms, such as cough and expectoration, do not necessarily confine the patient to bed, they subside gradually as the treatment is continued.

amine its contents for tubercle bacilli. As a rule, the treatment is continued at least for one year after the sputum has been persistently negative for tubercle bacilli.

There is a slight difference in the management of these cases treated in tuberculous institutions and in private practice, but the difference is not fundamental. I am now comparing the results of a group of cases which I treated privately with a similar group treated in tuberculosis hospitals and hope to report the difference, if any, in the immediate and ultimate therapeutic effects, complications, and economic rehabilitations. Suffice it to mention again that therapeutic results may be obtained in bilateral pneumothorax in early tuberculous cases without necessarily confining them to institutions. If, however, one side is extensively involved and requires a compressive pneu-



Figs 2A, B Roentgenograms of bilateral pneumothorax taken in inspiration and expiration, respectively. Right side shows perfect selective collapse with lower lobes expanding and contracting to almost physiologic limits, on the left side the selectivity is only relative.

mothorax on the side, the management becomes more difficult, and prolonged hospitalization may be indicated

Complications are no more frequent in bilateral pneumothorax than in unilateral cases, and with our present understanding of the technic and management of the treatment, complications should be very few. A spontaneous pneumothorax on any one side is an accident to be guarded against, although its occurrence does not necessarily spell a poor prognosis, most cases will clear up in a few days by bed rest alone, but occasionally it is imperative to aspirate the air from the pleural cavity in order to relieve embarrassing dyspnea

Clinical Considerations

Two types of bilateral therapeutic pneumothorax are recognized, (a) alternative or successive pneumothorax, i.e., at first one lung is treated with pneumothorax and when it is fully re-expanded, pneumothorax treatment is applied to the other side, (b) simultaneous bilateral pneumothorax, i.e., both lungs are treated with artificial pneumothorax at the same time. Alternating or successive pneumothorax has contributed considerably to the extension of unilateral therapeutic pneumothorax which is now employed on a large scale not only in tuberculosis institutions, but also in general clinics and in private practice. In this article, I confine myself to the considerations of only the simultaneous bilateral pneumothorax treatment which is gaining an important place in the armamentarium of phthisiotherapy, and needs no longer be considered a sanatorium measure. Whenever applicable it has proved to be the shortest and most effective method of treatment in tuberculosis of both lungs

It is particularly indicated in cases with early bilateral tuberculosis, of the caseous-cavernous type, that will yield to a selective type of pneumothorax which produces the greatest amount of lung rest with the least possible physiologic disturbance. Young adults with a history of short duration of illness are most amenable to this therapy for the pleural cavity is usually free from adhesions which are the bane of pneumothorax treatment in general

The therapeutic value becomes ques-

tionable in cases of marked pleuritic adhesions, or thick and rigid cavities which do not yield to a hypotensive pneumothorax, and the selective collapse is impossible. The creation of a compressive pneumothorax on both sides is dangerous, although Coulaud⁹ found that patients will tolerate an almost complete bilateral collapse. However, such a procedure would require strict confinement to bed and protracted hospitalization, and should be resorted to only as a last measure. Prolonged bed-rest is also indicated in cases with a compressive pneumothorax on one side and selective collapse on the other, if only for the sake of sparing the heart which has to work against odds to propel the blood for oxygenation through a markedly reduced pulmonary surface. This does not apply to cases of bilateral selective collapse, the expansile pulmonary area of which is wide and sufficient for proper ventilation. Sergeant¹⁰ has even recommended simultaneous bilateral pneumothorax as a preventative measure during pregnancy in tuberculous women. I advocate the application of this therapy to any case of early bilateral tuberculosis as long as the sputum is positive, for it is the quickest and most efficacious method for the closure of cavities and the removal of the source of further infection

Prolonged expectant treatment is unnecessary and often leads to the spread of the lesion and the formation of pleuritic adhesions, thus rendering a selective collapse inapplicable. While it is true that the treatment should be administered by competent phthisiologist, the diagnosis could and should be made by the general practitioner, who, as a rule, sees the patient first. Any suspicious case, either from the clinical history or from the physical signs, should immediately be given the benefit of an x-ray examination. Once the case is diagnosed, a phthisiologist should be consulted as to therapy. It is not necessary to send the patient to a sanatorium unless he desires to go. Many patients dread the idea of going to a tuberculosis institution. A general hospital does not carry a "stigma." The first few treatments are given either at the hospital or at the patient's home, and as soon as the clinical condition allows him to be ambulatory, the refills may be

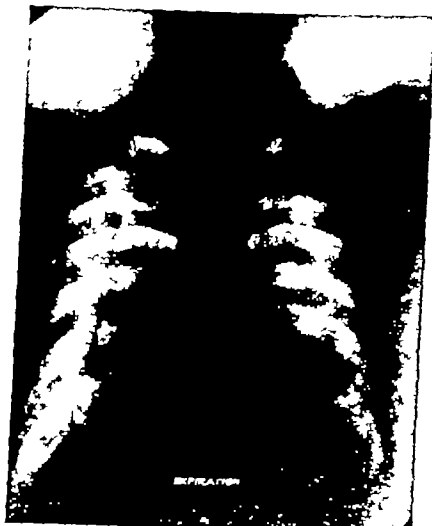
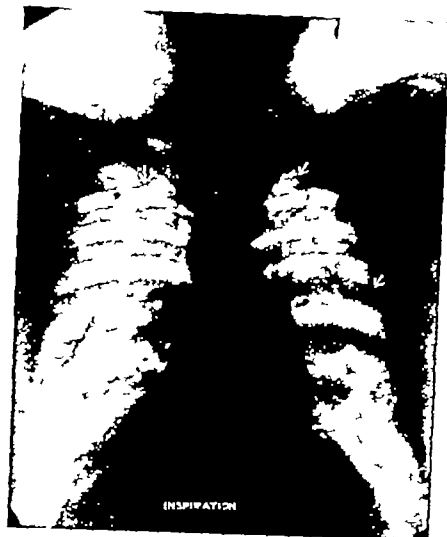
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It is particularly indicated in cases with early bilateral tuberculosis, of the caseous-cavernous type, that will yield to a selective type of pneumothorax which produces the greatest amount of lung rest with the least possible physiologic disturbance. Young adults with a history of short duration of illness are most amenable to this therapy for the pleural cavity is usually free from adhesions which are the bane of pneumothorax treatment in general.

The therapeutic value becomes ques-

tionable in cases of marked pleuritic adhesions, or thick and rigid cavities which do not yield to a hypotensive pneumothorax, and the selective collapse is impossible. The creation of a compressive pneumothorax on both sides is dangerous, although Coulaud⁹ found that patients will tolerate an almost complete bilateral collapse. However, such a procedure would require strict confinement to bed and protracted hospitalization, and should be resorted to only as a last measure. Prolonged bed-rest is also indicated in cases with a compressive pneumothorax on one side and selective collapse on the other, if only for the sake of sparing the heart which has to work against odds to propel the blood for oxygenation through a markedly reduced pulmonary surface. This does not apply to cases of bilateral selective collapse, the expansile pulmonary area of which is wide and sufficient for proper ventilation. Sergeant¹⁰ has even recommended simultaneous bilateral pneumothorax as a preventative measure during pregnancy in tuberculous women. I advocate the application of this therapy to any case of early bilateral tuberculosis as long as the sputum is positive, for it is the quickest and most efficacious method for the closure of cavities and the removal of the source of further infection.

Prolonged expectant treatment is unnecessary and often leads to the spread of the lesion and the formation of pleuritic adhesions, thus rendering a selective collapse inapplicable. While it is true that the treatment should be administered by competent phthisiologist, the diagnosis could and should be made by the general practitioner, who, as a rule, sees the patient first. Any suspicious case, either from the clinical history or from the physical signs, should immediately be given the benefit of an x-ray examination. Once the case is diagnosed, a phthisiologist should be consulted as to therapy. It is not necessary to send the patient to a sanatorium unless he desires to go. Many patients dread the idea of going to a tuberculosis institution. A general hospital does not carry a "stigma." The first few treatments are given either at the hospital or at the patient's home, and as soon as the clinical condition allows him to be ambulatory, the refills may be

continued either in a clinic or in the physician's office. The ambulatory treatment is of economic advantage to the patient as it allows him to attend to his usual daily duties without untoward effects. It is not meant at all to deprecate sanatorium care for those who want it and to whom it is accessible, but to stress the importance of early collapse therapy and to indicate the feasibility of carrying out simultaneous bilateral pneumothorax in the ambulatory

Summary

Simultaneous bilateral pneumothorax of the selective type is compatible with

useful work and can be carried out successfully in the ambulant patient.

The smaller the pathologic areas the more perfect is the selective collapse with the least reduction of the respiratory function of the uninvolved portions of the lungs.

It should be the treatment of choice in cases of early bilateral tuberculosis, as it offers a more speedy and more complete anatomic and functional recovery. Prolonged expectant treatment often leads to the spread of lesions and the formation of adhesions when bilateral collapse therapy becomes only an ameliorative measure.

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SCIENCE STRETCHING THE 'SHORTIES'

Short children have been brought up to normal heights, and even real dwarfs have been made to grow six or eight inches by the injection of a special growth hormone from the pituitary gland, according to Dr Josephine Hemenway Kenyon, of the Vanderbilt Clinic, who spoke to the Child Study Association in New York City recently, as reported in *The Sun*.

She told of a boy who was compensating for being so short by turning into a bully. She gave him the injections and he caught up to the normal height for his age within two years.

Another short boy was almost ready for college. For a year before he went he was given the treatment, and he grew about two inches. He now boasts of having raised the average height at Yale by hormones.

"We are experimenting on sixty-eight normal shorts," Dr Kenyon explained. "But our experiments have not been completed as yet, and we have not published

our findings for the medical profession. We feel that we need another two years on it before we will be ready to publish the results."

Meanwhile, however, Dr Kenyon is charting the growth of her sixty-eight "shorts," and is herself satisfied that they are growing faster than they would without treatment. Treatment, she says, should be started before the child is nine years old.

The world is getting taller anyhow, though. Perhaps this is because we know more about nutrition, Dr Kenyon thinks. She quoted figures on the growth of the present generation over the last one.

In England this generation is an inch taller than the last. In Japan there has been an increased height of 3.2 centimeters in the last thirty-four years. And in the United States women have grown an inch and a half during the last thirty-six years, men have grown one inch in the last forty years.

MEDICAL RADIO BROADCASTS

The Medical Information Bureau of the New York Academy of Medicine announces the following broadcasts from Station WABC and the Columbia Broadcasting System network.

Thursday, July 16, 1 30 P M—*Speaker* Dr Terry M Townsend, Director of Urology, Morrisania City Hospital. *Subject* "The Prostate Gland."

Thursday, July 23, 1 30 P M—*Speaker* Dr Alexander T Martin, Attending Pediatricist, Roosevelt Hospital. *Subject* "Summer Hazards for Children."

Thursday, July 30, 1 30 P M—*Speaker* Dr Edmund Prince Fowler, Surgery Director, Manhattan Eye, Ear and Throat Hospital. *Subject* "What Does Earache Mean?"

SELECTIVE TESTS USED IN INDUSTRY TO MEASURE SPECIFIC ABILITIES AND APTITUDES

MICHAEL LAKE, M D , *New York City*

In any complex organization, consisting of people with many varied tasks, one of the largest reducible costs is that of continually replacing trained employees, this includes the cost of hiring a man and training him until his production reaches the average level, as well as the cost of his mistakes which result in injury to good will, to property, to himself, and to others. This is difficult to estimate accurately, but in this store, (a large department store in New York City) it is said to be about \$250.00. Since each year about one-third of the total force either resigns or is discharged, aside from temporary seasonal variations, and since over half of these have been employed less than three months, and twenty per cent less than two weeks, obviously there was some fault in the original selection of this group. Progressive industrial management is keenly conscious of the inadequacy of the conventional employment methods and is constantly searching for any procedure which promises greater accuracy in choosing the right man for the right job.

The so-called psychological tests were first extensively used in the Army during the World War, and were later taken up by schools and to some extent by industry. The theory is that by measuring individual differences, we will be able to mathematically predict vocational success. The first enthusiasm was doomed to disappointment, because psychologists ignored the fact that they were not dealing with a machine, whose performance could be always predicted. V. V. Anderson, a psychiatrist, became interested in industrial personnel problems, and pointed out that work failure in the majority of instances is not due to the lack of any measurable abilities, but to influences which interfere with the use of these abilities, such as poor health, lack of interest, home problems, and especially, he believed, various personality disorders. He became connected with this depart-

ment store, first as a consultant, and later as employment manager, and was largely responsible for introducing the methods which I will review.

He introduced the clinical case method in the study of personnel problems, and later applied the same technic to hiring. The employment interviewers were trained by him to evaluate the educational, employment, and health history in psychiatric terms. The various tests became laboratory aids, and more weight was given to the personality make-up of the individual as revealed by the interview. Anderson states:

The health history not only helps to determine the actual present physical fitness of the individual, but throws light on mental conditions and personality disorders that so commonly reflect themselves in bodily complaints. The school career and educational background secured by the applicant, when properly interpreted, gives a picture of the opportunities the individual has had for equipping himself, and the use he has made of these opportunities. The work history not only indicates whether or not there has been a purpose and goal to which he has been striving, but what degree of success or failure he has met.

It was recognized that the major factors of vocational fitness cannot be tested objectively—the ability to get along with people, certain qualities of regularity (dependability), variations in mood, motor “drive” of the individual, his ambitions, sense of responsibility, etc., must be estimated by a critical evaluation of the past history.

At the same time studies were made of the outstanding workers in different departments, and those qualities listed which they tend to have in common. Analyses were made of the jobs themselves, and specific abilities which seemed to be required were listed, as the result of observation, motion studies, and the opinions of supervisors. A complete description of the requirements of each job were listed, together with the personal

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qualifications which predominate among the satisfactory workers in this group. This includes age, sex, education, marital status, physical condition, general intelligence, and special personality traits. In salesclerks, for example, the ability to make a pleasant and courteous contact is important, and calls for an extroverted well-integrated, fairly intelligent individual, while among packers and cashiers, this is not important, but manual dexterity is essential. It was found that cashiers with superior intelligence were twenty-five per cent worse in production and accuracy than those with dull average intelligence—they probably found the work uninteresting and monotonous. The same is true of packers and porters. The best salesclerks tend to group in the higher intelligence quotients, although twelve per cent of them have subnormal intelligence. For most jobs, average intelligence is desirable.

Then special tests were introduced to bring out special training, factual knowledge, or aptitudes which seemed as the result of these studies, to be required for different jobs.

Trade tests and tests of educational attainments, such as arithmetic, clerical speed and accuracy, spelling, typing, etc., are simply standardized samples of the actual process involved in the job, and their usefulness is obvious. The only unknown factors are the degrees of accuracy and speed which we will demand, and these standards can be determined by comparing the results of the tests with the actual performance of those who are hired, when the performance can be accurately measured. The tests imitate the actual process involved, for example, those who actually add have problems in addition, others merely check addition for errors, and still others are simply required to make change. The same is true of tests of factual information, as for book salesmen and wine and liquor salesmen. The book test consists of matching the names of one hundred well-known authors with book titles, and the wine and liquor salesmen test is of the true-false type, involving knowledge of vintage years, wine growing districts, and ingredients of mixtures. By means of a stencil, knowledge of any part of the subject may be discovered.

When we come to aptitude tests, such as tests for finger-dexterity, rate of manipulation (hand dexterity) reaction time, we are on more uncertain ground. These are physiological tests of the neuromuscular apparatus, which probably depend on heredity, and perhaps on early interests and training.

Several questions immediately present themselves on the significance of the results of such tests.

1 Is dexterity of one group of muscles accompanied by dexterity of all other groups? If so, any dexterity test, such as finger dexterity would be sufficient no matter what group of muscles are actually used on the job.

2 Does the result of such a test measure, not only the relative present efficiency of the subject, but the probable learning ability? In other words, after an equal period of practice, will the scores still be in the same relative order?

Frankly, I have not been able to get a satisfactory answer to these questions based on observed facts. Apparently the finger dexterity test (Johnson-O'Connor), which consists of picking up three pins at a time with one hand, and putting them into holes—score is based on speed—does not correlate with a test in which blocks are moved and turned—a test of the speed of larger arm and wrist movements. The tested series however was small. Apparently the actual production of packers (girls, who put merchandise in packages and tie them with string) shows a good correlation with the original test scores of finger dexterity. I believe the whole subject needs more investigation under laboratory conditions.

In practice, tests are used which most nearly imitate the actual performance of the job. For example, tube-room cashiers sit at parallel rows of desks. A moving belt between two rows brings from the selling floors through pneumatic tubes metal carriers containing a salescheck in duplicate and money. They pick up the carrier, open it with a twisting motion of the wrist, take out its contents, check the amount—there are often several items which are added—make change, stamp the salescheck with their number, tear off the duplicate and retain it, close the carrier, and replace it on the moving belt. They repeat this process about five times.

a minute for eight hours a day Records are kept of their productions, errors in making change, and the number of errors they discover (they receive ten cents bonus for each discovery) The tests for this job consist of

1 A manual dexterity test which measures the speed with which they can pick up a series of the actual carriers, open them, remove the checks, and note their numbers, replace them, and close the carriers

2 An arithmetic checking test—measures the ability to find errors in simple addition

3 Change making test, using disks

4 Tapping test, using arm muscles, to imitate stamping

Obviously, other things being equal, the girl who can go through these motions faster than another has an advantage at the outset. But it is also obvious that the ability to maintain this speed and accuracy for eight hours a day, week after week and month after month depends more on other factors, such as general health, good eyesight, ability to concentrate for long periods in fairly noisy surroundings without nervous tension We must get a person whose intellectual level and social background will not be such that she will find the work unbearably monotonous or consider it socially degrading, this would result in a constant emotional conflict An unsatisfied individual, who has no opportunity to use his mental equipment at his work, will become as much of a work problem as an unsatisfactory one, and more of a social and medical problem

Study Of Automobile Drivers—Traffic Accidents

In 1926 this store had, with a fleet of 276 cars which traveled 2,352,981 miles, 720 traffic accidents, or one accident for each 3,265 miles, probably the worst accident record in the city for a commercial fleet The delivery superintendent was told that something had to be done about it, and he began to investigate what others had done

A safety man was hired, who held weekly meetings and placed cards, containing a short accident message (such as are being used on the streets today) on the dashboard of each car The accidents dropped to one per 6,057 miles but were still much too frequent The

meetings became monotonous through repetition, and were abandoned

I All drivers were then studied by a group consisting of the plant physician, a psychiatrist, and a psychologist Work and accident records were obtained, as well as the opinion of the supervisor They were divided into those who were prone to accidents and those who were not Each man had a physical examination, a psychiatric interview, and the following tests

1 Porteus maze tests of intelligence—a non-language performance test.

2 Hopkins motor coordination test—a test mainly for eye-hand coordination

3 Judgment of distance test—one used for aviators to test depth perception and judgment of distance

4 Ishihara Test for color blindness

5 Standard Chart for testing vision

6 Routine physical examination

7 A driving test was devised by Dr Anderson consisting of a driver's seat, wheel, pedals, and a stimulus board with lights, simulating road conditions On the red light they were to push the brake, on the green light to press the accelerator, on the yellow light do nothing When two headlights appeared on the left, they turned the wheel to the right. When a detour sign appeared with an arrow to the left, they turned the wheel to the left. The instructions were reviewed with them and of eight trials, the last four were graded as to speed and correctness of response. During the test, the examiner noted such things as grasp of instructions, ease of movement, confusion, emotional control The test takes about ten minutes

We arrived at the following facts

1 The best drivers were in the average or dull average intelligence groups I Qs 80-109 There was one case of superior intelligence, four borderline defectives, and three feeble-minded, all in frequent accident groups

2 The range of scores in the judgment of distance and coordination tests was too small to allow any conclusions

3 There was very little deviation from the normal on the physical examination, since they had all been examined when employed There were, however, seven cases of poor vision, three of poor hearing, one of suspected epilepsy, two of syphilis, three of cardiovascular disease, who were all in the frequent accident group

4 Ages varied from 19-50 years Fifty-five per cent of all the drivers were twenty-

qualifications which predominate among the satisfactory workers in this group. This includes age, sex, education, marital status, physical condition, general intelligence, and special personality traits. In salesclerks, for example, the ability to make a pleasant and courteous contact is important, and calls for an extroverted well-integrated, fairly intelligent individual while among packers and cashiers, this is not important, but manual dexterity is essential. It was found that cashiers with superior intelligence were twenty-five per cent worse in production and accuracy than those with dull average intelligence—they probably found the work uninteresting and monotonous. The same is true of packers and porters. The best salesclerks tend to group in the higher intelligence quotients, although twelve per cent of them have subnormal intelligence. For most jobs, average intelligence is desirable.

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other words, he gets *measured through work performance*

The maximum salary for this job was increased, but any driver who had an avoidable accident became ineligible for a salary increase for *six months*

In 1929, annual physical examinations were introduced for all employees

Results The accident frequency continued to fall, so that by 1935 there was only one accident for each 34,034 miles, a decrease of eighty-eight per cent in ten years, during a period when traffic congestion in New York grew steadily worse. At the same time the production per employee (number of pieces deliv-

ered) increased seventy-one per cent, and labor turnover practically stopped—over ninety per cent of the present drivers have been employed over five years

Conclusion

Regarding the relative importance of these various measures, the view which seems most reasonable to me is that, given a group which is free from gross physical, mental, and emotional disturbances, a system of proper training and motivation—by rewards and punishments, fairly and rigidly enforced—will to a large degree solve the traffic accident problem

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A CASE OF CHRONIC ARSENIC POISONING IN A CHILD ASSOCIATED WITH PROFOUND ANEMIA AND SCLERODERMA

L. MARY MOENCH, M.D., *New York City*

From the New York Hospital and the Department of Medicine, Cornell University Medical College

This case of chronic arsenic poisoning in a child is of interest because of the anemia produced which has been described as characteristic of such poisoning, and because of the later development of scleroderma. The skin condition, occurring apparently as a result of this poisoning, is of unusual interest because of the obscure etiology of this serious and progressive disease, and the many theories which exist regarding it. The patient serves also to illustrate the insidious onset of symptoms which may occur as a result of presumably small amounts of arsenic taken over a long period of time, symptoms of so mild a character that an appreciation of their significance did not arise until serious tissue changes had developed, possibly of an irreversible nature. The source of the poisoning in this case has not as yet been determined although a careful investigation is under way at the present time by the Department of Health. It seems likely, however, that

whatever the source, it is one to which other members of the family have been exposed, for arsenic has been found in the urine of the parents of the patient although symptoms of poisoning are not evident. The fact that the patient is a child possibly explains the lower threshold of tolerance and possibly also justifies a better prognosis, if not for cure, at least for an arrest of the pathologic change.

Case Report

The patient, an Italian girl of fourteen, had been complaining for about a year of a sense of exhaustion and weakness which, although definite, was not enough to interfere with her activity or her school work. Her standing in school continued to be unusually good, but she seemed listless and tired. Her mother took her to the family physician who found her to be anemic, and gave her preparations of iron and bone marrow. No arsenic at any time was administered. She did not respond, however, and he advised a sojourn in the country for better food and living conditions, she accordingly spent the summer months in the country. Upon her return she felt much better and her doctor considered her improved, however, her fatigue soon returned and she was again found to be anemic. At this time there developed short attacks of

I wish to express my appreciation to Dr. Ralph G. Stillman of the Central Laboratories of the New York Hospital for the analysis of many specimens of urine for arsenic as well as of foods, in an investigation of the source of poisoning in this case.

three years old or less, and were responsible for seventy-four per cent of all the accidents

5 There was no correlation between education and accident frequency Eighty-five per cent of the group got no further than grammar school

6 There was no correlation with previous experience, marital status or home problems

7 There was a correlation of accident frequency with the driving test of five times the probable error—not sufficiently high to justify the use of the test alone, but sufficient to serve as an aid in selection (Reaction time, omissions, and errors were taken into consideration) The poor drivers tended to be slower in response, inconsistent in successive trials, made more omissions and errors, and showed evidence of poor emotional control

8 *Psychiatric Study* Sixty per cent of accident prone drivers had fairly definite personality disorders and thirty-one per cent of the others had such disorders The results of the psychiatric study showed the best correlation with accident frequency

This study, together with a study of the job itself, resulted in requiring the following qualifications for this job

Age 25-35

Sex Male

Schooling Public School Graduate

Physical Condition Good general health, good eyesight and hearing, freedom from special physical conditions effecting movements of arms, hands, legs and feet, ability to carry loads, freedom from conditions which make one susceptible to changes in weather

Intelligence I Q 80-110

Special Abilities Color vision—normal Arithmetic—fair Clerical accuracy and speed—fair Driver's test—good or fair

Personality Alert, active, stable individual, free from serious personality disorders, whose responses are quick and accurate. Must be pleasant and courteous, interested in routine and details, amenable to discipline, who can work without supervision and has slight supervisory ability

A great many of the poor drivers were eliminated as the result of the study For about a year, all applicants for the job were referred for a similar study, then this was stopped

In the meantime, the problem was attacked from other angles

II *A Training School for Drivers* was established on February 1, 1928 and is still in existence Its purpose was to train helpers advanced to drivers, new

drivers, and accident makers It also sends a man out in a car to observe drivers at work and interviews those who are not observing the safe practices taught by the school All new applicants are given an actual road test as part of the employment procedure.

The training program consists of mechanical instruction and actual highway demonstrations An analysis of avoidable accidents showed three types of accidents to be responsible in eighty per cent of the cases

Intersections	22%	
Running into car ahead	34%	
Careless backing	24%	80%
<hr/>		
Passing too close	8%	
Left turn, hit in front	4%	
Hit immovable object	8%	20%
<hr/>		

1 The driver was shown that accidents are costly—it was expense which was subtracted from money available for salaries, and that the store would rather pay it as salaries than as insurance premiums, because the injured or aggrieved individual was a customer of the store

2 He was told that accidents are unnecessary because intelligent anticipation of trouble prevents them A committee of the delivery department passed judgment on all accidents In this connection, certain arbitrary rules were made

a An intersection accident was *always* avoidable because he must not dispute the right of way with a customer of the store (courtesy) and because the store—a large corporation—always paid the bill in the end (22% of accidents)

b That he was always at fault for piling up on the other fellows tail-board because he *failed to anticipate* the sudden stop by keeping far enough back for the speed traveled and because he was *never* at fault when the other fellow hit his tail-board (34% of accidents)

c. That his helper was with him to help guide him when backing up so that he would not run over his own child sitting on the curb (24% of accidents)

III *New Department Approach* Soon the employment of new drivers was discontinued, all drivers being obtained by promoting helpers on the job During his helper experience the dispatcher and the delivery superintendent get to know him pretty well There is a check on his accuracy in handling money through COD collections, on his attitude and type of mind through attendance and customer complaints, and the report from his driver on attention to his duties In

regarded as tentative. Some at least may prove dyshemopoietic."

The development of scleroderma in this case is of much interest. Scleroderma in children is a rare condition. Oliver¹⁰ reports three cases and in reviewing the literature quotes the statistics of Lewin and Heller¹¹ in which it occurred in only ten children under fifteen years of age, in a series of 508. Of 103 cases reported by O'Leary and Nomland¹² there were none in children, and Fox,¹³ in a discussion of the paper by Oliver, stated that in the records of about 75,000 skin diseases at the University and Bellevue Clinics there was found only one case of scleroderma in a child, a boy of fourteen. Since scleroderma is a rare condition, not only in its general incidence, but since it is even more unusual in children, one is more impressed by the appearance of the disease in this child in association with the symptoms of arsenic poisoning after a year, during which the general symptoms and the anemia indicated that this poison had been operative. The association of scleroderma with arsenical poisoning has been noted occasionally in the literature. Ayres¹⁴ in 1920 presented three such cases from the Massachusetts General Hospital and urged in his paper that patients with scleroderma be examined for the presence of arsenic. Sutton¹⁵ as a result of this observation examined his cases and found arsenic in one, and O'Leary of the Mayo Clinic stated in a personal communication that he had seen a number of patients who developed what appeared to be scleroderma in association with acute arsenic poisoning. Alice Hamilton¹⁶ states that the association probably occurs more often than is generally recognized. The etiology of scleroderma is not known. Recently the opinion has been widely held that this disease is the result of a primary endocrine imbalance, the exact nature of which is not understood. In some cases the thyroid has been suspected and both high and low basal rates have been reported. More recently the parathyroids have been considered the responsible organ, and hypercalcemia associated with osteoporosis has been reported. Several cases have occurred associated with the typical picture of Addison's disease, with the finding at autopsy of a destroyed adrenal cortex. In view of this theory of an endocrine background the patient was carefully examined to determine whether such factors were present in this case. The basal metabolic rate was minus eleven, a reading consistent with the anemia and poor general tone of this patient, and not suggestive of a primary hypothyroid function. The blood chemistry served to rule out a hyperparathyroid state

—serum calcium was 10.8, phosphorus 4.9 mg per cent. X-rays of the skull and long bones did not show evidence of osteoporosis. Finally, there was nothing in the clinical picture to suggest the presence of Addison's disease. However, the close association between the endocrine glands and the sympathetic nervous system is well-recognized, and it is the opinion of many dermatologists that the disease may have its origin in a disorder of the autonomic nervous system. The presence of Raynaud's syndrome in this patient is of interest in this connection as well as the occasional attacks of intestinal colic. The toxic effects of arsenic upon the central and peripheral nervous systems are well-recognized. Alice Hamilton¹⁷ states that next to the skin lesions the most outstanding feature of chronic arsenical poisoning is multiple neuritis with sensory, motor, and trophic disturbances. The shooting pain in the posterior thighs and popliteal regions characteristic of a peripheral neuritis were a definite although not a prominent feature in this case. It was interesting to observe that as the arsenic became mobilized in the blood during the weeks following the administration of sodium thiosulphate, these pains became more pronounced, although in time they disappeared. The occasional development of optic neuritis during the use of the arsenical preparations in the treatment of syphilis is well-recognized and that the brain itself may be susceptible to poisoning from arsenic has been demonstrated by such cases of extensive hemorrhagic encephalitis as that reported by Osterberg and Kernohan.¹⁸ Since such widespread damage may occur to nerve structures, therefore, it seems not unlikely that the autonomic nervous system may be susceptible to the same toxic effect. In this case the temperature changes in the hands, the sweating of the palms, the erythromelalgia, and later the development of turgor and the thickening of the subcutaneous tissues of the hands and contiguous structures of the forearms, would make it reasonable to assume that the same process might be operating to produce the latter as well as the former changes. Allen¹⁹ has shown by the injection of opaque substances into the arteries, occlusive lesions of the smaller arteries or arterioles in cases of scleroderma, but whether such changes are primary or secondary must wait upon more detailed pathologic studies, as he points out. Sympathectomy performed in twenty-four cases of scleroderma at the Mayo Clinic appeared to offer protective value against the progression of the disease and the subsequent development of ulcers and progressive fibrosis.²⁰ It would appear,

diarrhea and occasional shooting pains in the legs, radiating from the posterior thighs into the popliteal space, and as there seemed to be no response to treatment, her physician thought that she should have more intensive investigation to determine the type of anemia. He referred her to the clinic, therefore, with the tentative diagnosis of pernicious anemia. At this time she offered the further information that for the past three months she had noticed stiffness of the fingers and that the skin of her arms seemed "tight." There was a similar feeling of "tightness" in a small area under her chin. These symptoms, although they had been gradually increasing, had not troubled her greatly and were only an incidental complaint.

Examination revealed a normally developed and nourished young girl. Her skin, although naturally dark, seemed to be unusually dusky, this pigmentation was somewhat deeper over the bony prominences of the elbows and knees. The mucous membranes of the lips appeared mottled and slightly cyanotic. The skin of the forearms was tense and glossy and the subcutaneous turgor was definitely increased. A small area in the submental region showed a circumscribed "cobble" tightening of the skin. The hands were cold and moist, and the fingers could not be completely flexed. She stated that on exposure to cold they became red and painful.

The physical examination in other respects showed essentially normal findings. The temperature was 37° C, pulse rate seventy-two, respirations eighteen. The blood pressure, in millimeters of mercury, was 110 systolic and eighty diastolic. The pupils reacted normally. There was no evidence of infection in teeth or tonsils, and there was no glossitis. Examination of the heart and lungs revealed normal findings. There were no palpable masses nor tenderness in the abdomen. The spleen was not palpable. The central nervous system was objectively negative and the fundus examination did not reveal changes in the eye grounds nor any evidence of atrophy or other changes in the optic nerve.

The blood count was as follows: 139 gm of hemoglobin per 100 c.c. of blood (96%) Sahli, erythrocytes 2,300,000, and leukocytes 12,400 per cubic millimeter of blood. Polymorphonuclears, adult neutrophils fifty per cent, immature forms twelve per cent, lymphocytes twenty-five per cent, monocytes nine per cent, eosinophiles four per cent. Volume index 1.3, Reticulocytes 30%. The platelets were increased. Toxic granulation, graded ++ was present. Polychromatophilia was graded +. There was very little variation in size and shape of the erythrocytes.

These findings, as well as the age of the patient, was not entirely characteristic of pernicious anemia, and this diagnosis was further excluded by the presence of free hydrochloric acid in the gastric contents following alcohol stimulation. The generalized pigmentation, the vague neuritic pains, the occasional gastrointestinal colic suggested the possibility of arsenic poisoning and it was recalled that an anemia of this type occasionally occurs in poisoning from this metal.^{1,2} The urine was accordingly analyzed and showed the presence of 0.15 mg of arsenic per liter of urine. In view of this finding the patient was given sodium thiosulphate 0.5 gm three times daily by mouth, and during the mobilization and excretion of the arsenic a very prompt and striking change occurred in the blood. No other treatment for the anemia was given. The blood counts are given in Table I.

Comment

The blood picture, that of a hyperchromic anemia with a leukocytosis, is an unusual one and deserves some comment. The question naturally arises whether the toxic effect of arsenic is upon the bone marrow or upon the peripheral blood. That some peripheral hemolysis or destruction must occur is borne out by the presence of the generalized pigmentation, for it has been shown that this pigmentation is due not to deposits of arsenic but to a laying down in the papillae of the cutis of the broken down products of blood destruction.³ It has been shown that the erythrocytes in arsenic poisoning acquire an increased resistance to hypotonic saline.^{4,5} The icteric index, taken in this case after the institution of treatment, was a high normal reading (7.5) which is valueless in enabling us to decide whether hemolysis had actually occurred at the time when the toxic effects were active. According to Brouardel's^{7,8} experiments with dogs, arsenic remains longest in the spongy part of the bones and next longest in the brain, and as Janet Vaughan⁹ has said, "although these anemias are commonly classified as hemolytic such a classification should be

TABLE I

Date	Hemoglobin gms (Sahli)	Erythrocyte count
October twenty-seventh, 1935	13.9	2.3 m
October twenty-ninth	13.9	2.7
November twelfth	15.2	3.1
November eighteenth	13.9	4.1
November nineteenth	14.8	4.0
November twenty-sixth	15.4	4.0
December third	14.2	4.5
December seventeenth	14.5	5.1

THE PRACTICABILITY AND SIGNIFICANCE OF BLOOD IODINE ESTIMATIONS

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Our present conception of the relationship of iodine metabolism to thyroid disease has been acquired chiefly from nutritional investigation and clinical observations. In recent years, a better understanding of the biochemistry in hyperthyroidism has been made possible as a result of the development of improved methods of microchemical analysis of iodine in blood. Most blood iodine studies have been concerned with the variations found in clinical hyperthyroidism. The majority of workers have reported an elevated blood iodine in this condition. However, blood iodine values have been found within the normal range in twenty-five per cent of our cases of severe and uncomplicated thyrotoxicosis. The conclusion deduced is, that the degree of the blood iodine elevation does not parallel the severity of the clinical syndrome. Furthermore, conditions other than thyroid disease influence the blood iodine level. A knowledge of such complicating factors is essential in evaluating the results of blood iodine analysis. The existing confusion regarding the interpretation of blood iodine values has prompted the present discussion.

Good laboratory facilities are of primary importance in order to effect accurate blood iodine analysis. Such cannot be carried out, with accuracy, in a laboratory in which solutions of iodine are used for other purposes. Cross contamination with iodine has been, in our experience, the greatest source of error. This may occur in many insidious ways, such as sublimation from an unstoppered bottle of iodine, even in an adjacent room, or from visitors who have either used medication containing iodine, or carried iodine on their clothing. It is a matter of experience that erratic blood iodine results become consistent after a thorough cleaning of the laboratory.

A strict procedure for cleansing all the apparatus used for securing blood samples and making the determinations should

be followed. The syringes and needles used for taking blood should only be used for this one purpose. Alcohol is used to cleanse the skin. The blood (10 c.c.) is transferred directly to a fifty c.c. capacity nickel crucible with a close fitting lid. The crucible, lid, and contents are weighed, and the weight of the blood thus determined. Two grams of potassium carbonate are added. The crucible is then placed in an electric muffle furnace which is heated to 500° C and maintained at this temperature for five hours. Sufficient distilled water is added to the charcoal residue to make a malleable paste. This paste is extracted with three washings of ten c.c. each of ninety-five per cent alcohol. The extract is filtered and the filtrate dried, without boiling, in a round bottom evaporating dish. The residue is washed with distilled water into a small titration tube and made acid to methyl orange with tenth normal sulphuric acid, the end volume not exceeding 15 c.c. The iodide is oxidized to iodate by adding five drops of a freshly prepared saturated water solution of bromine. The excess bromine is removed by boiling for one minute. After cooling, potassium iodide is added to free the iodine from the iodate. A solution of 0.05 N sodium thiosulphate in a microburette graduated to 0.01 c.c. (estimated to 0.005 c.c.) is used for titrating. The calculation is made on the basis that 0.1 c.c. of the thiosulphate solution is equivalent to 4.23 micrograms of iodine in the original sample of blood. Blank estimations using ten c.c. of iodine-free water in place of blood should not exceed 0.2 micrograms. The necessity of using iodine-free chemicals has been dealt with by others^{1,2} and will not be reviewed here. A more detailed explanation of the technic devised by one of us is reported elsewhere.³

It is our opinion that any particular technic for blood iodine analysis is accurate as employed by the laboratory worker who is familiar with it. The re-

therefore, that this case offers evidence that the presence of the arsenic may have been more than an accidental association, and that the arsenic acted as a precipitating factor, of which there may be many, "varying greatly in kind and character,"²¹ to produce the changes in the subcutaneous tissues characteristic of scleroderma.

The question arises as to the prognosis in this case. It is the experience of O'Leary²² that as a rule the scleroderma persists after the arsenism has subsided. This patient was under treatment for three months, during six weeks of which the urine has been practically free of arsenic, and the edema of the forearms has definitely subsided. There

had been no change in the stiffness of the hands and fingers. The prognosis for cure is better for children than for adults in the cases reported and since the symptoms were of short duration (three months) one may possibly be justified in the hope that reversal of the pathologic changes may occur, or that at least the disease may be arrested.

Summary

A case of chronic arsenical poisoning associated with anemia of the hyperchromic type and with scleroderma is presented, with a discussion of the possible significance of this association in the production of scleroderma.

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WHAT IS CERTIFIED MILK?

This question was answered the other day at a housewives' meeting in Brooklyn by Mrs Edward Blake. "The only milk sold in New York City that does not have to be pasteurized is certified milk," said Mrs Blake. "The rigid health rules of the Milk Commission, the laboratory control, the strict sanitary and hygienic regimen necessary to produce this higher class of milk require the employment of especially competent employees and consequently higher labor costs.

"Certified milk is produced under sanitary conditions approved and controlled by the Milk Commission of the County Medical Society, an organization to which all physicians belong.

"Certified milk is obtained from healthy cows, supervised by the Milk Commission's veterinarians, which are barn fed the year round with the highest quality of food to insure a milk of the same quality and the same nutritional value day in, day out. Competent physicians make weekly medical examinations of employees to insure against

human disease contamination.

"The cow barns are cleaned and the cows washed with soap and disinfectant solution before milking. The milkers wash their hands carefully before milking each cow and wear uniforms that are laundered daily. Certified milk is cooled, bottled and sealed on the farm where produced, eliminating the dangers of shipment in bulk and the possibilities of contamination.

"Certified milk is delivered with express service and the date of production which appears on the cap insures the consumer of its freshness. For those who demand the best—cleanliness, freshness, nutritional quality and superior flavor—certified milk at only 3 cents a quart additional premium price provides not only an ideal table milk but also the best available food value for the infant, the growing child, the nursing mother, the invalid and the convalescent."

Certified milk is more nutritious per pound than a pound of steak, Mrs Blake remarked, and, although nutritious it is not fattening.

LIFE AND LOVE

A Symphony in C Major and B Minor

- I Andante—Allegro con fuoco—Amoroso—Vivace
II Adagio patetico—Ma non troppo
III Scherzo
IV Finale—Grave—Allegro—Lentement—Sostenuto—Esto Perpetua

IRA S WILE, M D, *New York City*

I Andante—Allegro con fuoco— Amoroso—Vivace

Music unites the sensuous values of sound into a coherent and reasonably consistent whole. The developmental expansions from the activities of the Muses to the harmonics of music transcend the mythologic influences of Apollo, Athena and Pan or Pythagoras, Tubal-Cain, St Cecelia, Palestrina, and Wagner. The Art of Music, according to Sir John B. McEwen "consists in the arranging of successions and combinations of musical sounds of varying force and duration, according to certain principles some of which seem to be essential and necessary, while others are unessential, conventional, and temporary." This definition of musical art has analogic relationship to life itself. Both involve motion-vibrations and the larger organization of simple stimuli, both involve emotional factors of production and reception which also are the essentials of love.

The orchestral interplay of strings, reeds, brasses, and crash instruments finds expression as an interpreter of the life and soul of man. Man's transcendent musical genius has evolved musical form from single notes to chords, from tetrachords to octaves, from the monochord to the organ from staccato monotone alarms to profoundly interpretative symphonies that describe the gamut of human emotional experience and reveal the plumbed depths of life and love.

The symphony from Haydn to Beethoven, from Schumann to Brahms, from Bruckner to Scriabine is more than a blend of beautiful sounds symbolizing life in its lights and shadows, its hungers and loves, its trials, and its triumphs. The symphony reveals a polyphonic tonality in which numerous instruments contribute what is essential for every movement. No

single type of instrument is indispensable for every one or any one may be called into dynamic participation to sound forth a vital phrase of the entire expressional revelation. Thus life, in its visceral and nervous organization, plays upon the various component systems that in turn are founded upon tissue and cellular structures and functions. Life itself, in its organic structure and functional variations, is symphonic, with its majors and minors, harmonies and dissonances, and with movements allegro, adagio, and scherzo. It offers unities involving many instruments and players, combining unlimited tonal values, melodic themes with modulations whose meaning is known only to the great composer. Each part of life may be distinctive but it is nonetheless related to the whole truth. Birth is the foundation of death.

Love similarly sounds forth in harmony with viscerally concerted activity. The emotional force varies greatly as love does not always employ an identical or an identifying instrumentation any more than it reveals the same pitch, intensity, rhythm or tonality. The main theme of life is love, while love's melodic chord is answering contrapuntally the surging movements of life.

The inherent values of life and love find common source in death. To live and to love find their rich emotional meaning in the idea of possession in the face of loss. To lose life or to lose a loved one gives tonic major values to the possession of life and love. The idea that "the absence sharpens love, presence strengthens it," is patent in philological facts. The word life, from the Anglo Saxon *lifian* = to remain, correlates with the idea to live—exist, meaning to be left behind, i.e., to remain. Hence life, as a period of existence, implies a remaining antecedent to non-existence. Love, in the sense of affec-

Read Before The Doctors Club New York City, March 25, 1936

sults secured by different investigators using the same or different methods may vary. However, such variations do not discredit the value of the results secured as they are relative within themselves. While it is important to be able to determine the absolute amount of iodine in the blood of an individual, the ability to differentiate, to an error of less than ten per cent a small amount of iodine in one sample of blood from a smaller amount in another, is of greater practical significance. Accordingly, we attempt to carry out an iodine analysis on a constant amount of blood (10 c c) from each individual, and check our method at intervals by doing a duplicate analysis. Only in those instances where the blood iodine is suspected of being decidedly elevated (10 x normal as in iodine tolerance tests⁴) are smaller amounts of blood used for analysis. Once the microtechnic is established for estimating one microgram of iodine, such an amount can be more accurately determined than can five micrograms, using the same technic.

Let us now consider the results which have been accumulated in effecting one thousand blood iodine estimations on approximately 750 individuals.

In 114 apparently normal individuals, the blood iodine range was found to vary from 1.5 to 12.0 micrograms per 100 c c of whole blood with an average of 6.8 micrograms per cent. Five per cent of normal individuals were found to have blood iodine values in excess of our upper established normal limit of ten micrograms per cent.

In 131 cases of clinically nontoxic adenomatous goiter, the blood iodine was found to vary from 1.6 to 12.8 micrograms per cent with an average of 7.0 micrograms per cent. Six per cent of this group showed blood iodine values in excess of ten micrograms per cent.

In 224 cases of clinical hyperthyroidism (primary hyperthyroidism and adenomatous goiter with hyperthyroidism) the blood iodine range was found to vary from 2.0 to 15.5 micrograms per cent with

an average of 21.0 micrograms per cent. Of the group twenty-five per cent had a normal blood iodine in the presence of clinical hyperthyroidism. This latter group does not contain borderline cases but are patients who evidence a marked degree of thyroid intoxication.

Certain clinical conditions, other than clinical hyperthyroidism exist, in which cases an elevated blood iodine is usually present. In gall-bladder disease (acute and chronic cholecystitis and biliary obstruction with or without cholelithiasis) the blood iodine is usually elevated. In individual cases with jaundice, the blood iodine has been found to decrease with clinical improvement. The relationship of liver function to iodine metabolism merits further study. An elevated blood iodine has also been found in patients with fever, acute infectious processes, and leukemia.

Treatment with iodides produces an increase in the blood iodine level, irrespective of the manner in which it is administered (inhaled, applied, injected or ingested). The degree and length of time of the blood elevation is dependent upon the time the blood sample is taken, relative to the time of application, as well as the manner of application, chemical form, and amount of iodine administered. In patients with thyroid disease who have had previous iodine therapy, the blood iodine values are of questionable significance within five days of the last dose.

Relatively little is known concerning the variations in the level of iodine in the blood which may occur in health and many common diseases. However, in the light of our present knowledge, microchemical analysis of iodine in blood is a practical procedure and serves a purpose in elucidating more clearly the role of this element in the body.

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The first International Conference on Fever Therapy is to be held at Columbia University, New York City, from Sept. 29

to Oct. 3. Information may be had from the General Secretary, Dr. William Bierman, 471 Park Avenue, New York City.

rather to those instances in which there is some additional cooperative functions such as are involved in nutrition and protection. Love later is organized in terms of an awareness of the ego and its projections. In its finest form it prevails as a character of man's endowment which raises his plane of responsibility for his own activity in reproducing his species.

Love is difficult to define. The dictionary refers to it as "a strong complex emotion or feeling inspired by something, as a person or a quality, causing one to appreciate, delight in, and crave the presence or possession of the object and to please or promote the welfare of that object." This obviously is not mere mating. Specifically, however, it is "such feeling between persons of opposite sex, based on or affected by sexual attachment." Love, however, is not always existent between or limited to persons of the opposite sex. In another sense it is defined as "animal passion or the gratification of it." These definitions require as supplement the understanding analytic values of Herbert Spencer who wrote

Round the physical feeling forming the nucleus of the whole, are gathered the feelings produced by personal beauty, that constituting simple attachment, those of reverence, of love, of approbation of self-esteem, of property, of love of freedom, of sympathy. These, all greatly exalted, and severally tending to reflect their excitements on one another unite to form the mental state we call love.

It is the vitalizing force, implied in "all greatly exalted" that raises man to untold heights when love encompasses and permeates him. Out of this feeling for Eros with conscious values man has formulated the Anterotic goals of parental and filial love and built up ideals of love of country and love of all humanity.

Patently love is not an essential of marriage as is demonstrated in the history of this useful institution during its development through parental arrangement for wealth, convenience, social condition, and political necessity. Among some primitive people, as the Papuans, there is no word for love. Recently I passed two elderly, dumpy elaborately painted women, just as the shorter one remarked to her companion "But *you* never learned to love *your* husband." This contains some of the

idea once prevalent and succinctly voiced by Plutarch "Love comes after marriage." Little wonder that the poculum amatorium was sought to induce a state of enchantment and magic love philtres were employed to invoke love just as today many unhappy but loving souls seek some helpful aphrodisiacs.

Romantic love is a theme for poets and writers but its actual prevalence is less widespread than the world acknowledges when the doctrine that love finds a way is frequently nullified by social regulations and conventions. Romance and chivalry take little cognizance of bonds and regulatory laws as appears in elopements, bastardy proceedings, and divorcements. Marriage finds its enrichment and potentials of permanence when love cements friendship with idealization and finds a reasonable realization of compatible developments of the lovers, whether love precedes or follows marriage.

Charles Mills in *The History of Chivalry* wrote "For a mediaeval Knight the chief object of life was love." And he states love "is the chaste union of two hearts, which attached by virtue, live for the promotion of happiness, having only one soul and one will in common." For this Knight, "Love was the crowning grace, the guerdon of his toils" but it mattered little whose wife was the fair lady. The romance of love found its fullest expression in the legal Courts of Love, once popular in France, approved by Margaret of Navarre and delightfully described by Chaucer in 1346 who enumerates the twenty statutes of love of which the last was

To wring and wail, to turn, and sigh
and groan,

When that thy lady absent is from thee

The love, of romance, is essentially heterosexual but not always within the bounds of realization. There is, however, evidence of romanticism in some types of homosexuality. Romantic love involves longing, desire, and an urge to mating activity, whether realized or kept at the virtue level of self-control. One thinks of the romantic love of Damon and Pythias, David and Jonathan, as readily as of Abelard and Heloise, Queen Elizabeth and the Duke of Essex, George Eliot and George Henry Lewes or Bau-

tion with its idea of coveting, is allied to *hief* = dear, directly growing from the Sanskrit *lubh*, meaning desire. Hence one senses the fuller meaning of a love of life as a desire to remain and continue, while a life of love connotes the ideation of a pleasure and a desire which is involved in the fostering of a certainty of the renewal of life.

In ancient legend Eros was the son of Aphrodite, goddess of human love, later called Aphrodite Urania, the symbol of wedded love and fruitfulness, even as her worship deteriorated to sensual levels after the regulation of Solon. Eros had a brother Anteros, the god of mutual love, whose companions included Pothos and Himeros, the personification of longing and desire. The story of Eros and Psyche reveals the human soul overcome by the emotional and spiritual powers of eroticism which originally in Greece betokened the devoted friendship and love between youths and men, as was natural for the sons of martial Ares and was exemplified by the Sacred Band of Thebes. Today the spirit of Eros and Anteros constitute the essence of life in war and peace.

We know life and love by phenomena far from modern scientific explanation. The distillations from the alembic of life, the crystal clear sublimations of love may be described, but their sources and nature are unknown, despite theories and experimentation as diverse as the earth, air, water, fire, roots of Empedocles, and the radiant electric energy of Crile. Whether one flies to God or Nature, to chemistry and physics or to metaphysics one finds two phenomena related, coexistent, interdependent and mutually supportive but both without their sources revealed or even localized. They are unified, interfabricating, mutually inspiring, emotional manifestations of the continuity of matter and the reorganization of universal instruments and motifs into newer symphonic arrangements. Their vibrant interweavings constitute the phantasia and realities of human experience.

If life were constant in molecular balance, growth would be impossible. A polarity of forces is essential with some form of asymmetry requisite for progress and evolution. This is observable when man's desires oppose his achievements, when he is spurred on by his own frailty and

weaknesses. He attacks his world and lives through his efforts and every failure stimulates him to acquire new strength and direction. He finds himself relaxing before a more powerful contraction—this is the pulsation of life—the blood stream in its conscious throb advances his horizons of potential accomplishments. His plane crashes and he soars again in a better one with renewed confidence and a greater assurance of stability. He is forever rising upon the stepping stones of his frustrated self to higher things. This characterizes his world of vital effort and attainment.

Life, however, is not a special gift to man, his responsiveness differs in degree rather than kind from the vital reactivity of the amoeba. Life is inherent in all protoplasm and existence without reproductive capacity is termed inanimate. Hence procreative potentials inhere in the concept of life. Maturity represents procreativity throughout the zoological scale, even though immature creatures may anticipatively disclose the portents of their goal of life—this being most apparent among human beings.

The universality of life conduces to its own continuity although the reproductive process varies from fission and conjugation to parthenogenesis, self-fertilization, and sexual fertilization. Mating, on the basis of sexual differentiations, for facilitating the material immortality of a species, goes back to the unicellular organisms. Creation renewed is the core of permanence for existence as a type. Mating, however, is not love and either may occur without the other. Mating is the expression of a prodigious urge out of which develop trends to organizing familial life on the basis of the recognition of one's own personality and its duplications in kin and kind. An emotional factor beyond a deterministic drive appears to function in the familial life of the osprey and the gorilla. The male stickleback and the male sea-horse reveal a type of activity far more amatory in idea than the tremendous migratory drive of the salmon leaping upstream to reach spawning ground in fresh water or the fresh water eels that are driven to spawn in the salty Sargasso sea. The so-called love life of many animals is not to be ascribed to the mere process of insemination or fertilization but

Love is a recent development. In the broad significance of an old song "Life begins with love" Love is latent in life and may never become actively manifest. It probably originates, as I have implied, as a secondary protective function of sex. It evolves into a force for a peculiar specific social relationship which involves a desire for possession of the love object, together with a longing to share and mutually to participate in non-sexual activities. In the final analysis it becomes a preparatory organization of the organism for ultimate mutual undertakings allowing for the advancement of the two parties in and through all forms of life experiences including sexual interaction, whether or not with a procreative goal.

The potentialities of procreation and the desire for the experiences of parenthood yield emotional satisfactions which give new reasons for living. Thus considered, love does not depend upon blind impulse or momentary satisfaction but consists of a mutual pleasure motive, leading at all levels to personality harmonies and expansions. In its essence love is an emotional idea that liberates sex by bringing about a reasonable emancipation from an actual sex determinism. It organizes the unconscious factors through a conscious recognition of their relation to the needs of personal living, rather than as an incident in the life stream of the race.

At the time of the Reformation John à Lasco regarded marriage as having some goal beyond begetting in that it served as a "sacrament of consolation" to the united couple. This concept enters into one phase of activity in behalf of birth control insofar as it suggests man's control over his own destiny as a thinking being rather than as a creature controlled by his sacral ganglia. The stoic philosophy emphasized the significance and value of knowledge in the regulation of life, by combining logic and ethics. All elements in man were deemed to be bound together and without actual independent existence. Life in accord with Nature was held to be Virtue, the end and goal of life. Love itself is no mere platonic "divine madness" but an element of human experience—a motive power with direction, a powerful urge for the direction of activity, and at once a mode and goal of life.

Love may be a virtue but it is an out-

growth of a tremendously complex organismic mechanism. A part of its cycle is apparently physical while another part, possibly less understandable, is primarily psychical. The superficiality of sexual stimulation is in sharp contrast with the depths of total responsiveness available and exhibited towards specific persons. The organization of love cannot be interpreted wholly in terms of hormones and ductless glands. Psychic dispositions are not always in harmony with physical externalities. The physical sex characteristics and even the adventitious sex adornments do not predetermine psychical longings or the potentials for ecstatic contacts. Love is as one gives it even as it has been said "A man has a choice to begin love, but not to end it." As one gives love, one shapes life and becomes the conscious director of his love life.

This is not wholly true because, while the biologic structure of the love mechanism may appear to be well-defined, its psychologic phases may be modified by economics and sociology. Just as sex organs rarely appear in artistic productions, so genital primacy is not an essential in the foreground of the art of love. Admittedly, hormones stimulate and inhibit psychic activity and socially induced attitudes toward primary sexual organization affect personality. The sexual constitution is an accepted factor in living as well as in loving and not always at the physical level. The influence of micropenis, hypospadias, cryptorchidism, congenital absence of the hymen or an enlarged clitoris are as powerful in life adjustments as they are in affecting the love life. The organ is affected but the organism responds. Life is what one makes it but only in terms of love as one gives it.

Granting that there is an essential genetic differential between the sexes, is there a true hormone for love? When the sex interest is female and the sex structure is female, is there a specific factor operative? Is the basic function of love bisexual? Are there hemaphroditic elements functioning through psychical and physical channels? Is love as freely modifiable by social cultivation as suggested by Margaret Mead in "Sex and Temperament?" Are personal needs the basis of the direction of love? Certainly phenomena such as rutting and lactation are not subject

delaire and Jeanne Duval, his Black Venus

The social implications of love were manifest among the Samurai and Greek youth even though the procreative values came to represent the pivot of social concern. The religious influences that diverted the sexual urge to celibacy as emphasized by St Paul and St Augustine also brought new ecstasies as manifest in the life and visions of St Teresa. The monogamic heterosexual ideal gave rise to love situations as social as marriage, as asocial as the personal mistress, the *hetairae* and the Geisha girl and as antisocial as prostitution when it was not a temple rite.

Marriage was set up as an institution apart from love, which was not an essential factor in the marriage contract of the Greeks or Romans, any more than in marriages devised for familial purposes. In the words of G. Lowes Dickinson (*The Greek View of Life*), "the modern conception that the marriage relation is a matter of private concern and that an individual has a right to wed whom and when he will, was one altogether alien to the Greeks." The laws of the Aryas condemn as utterly immoral "the voluntary union of a maiden to her lover." Even among the Chinese, marriage is intended to create and foster "a bond of love between two families."

Life indeed is what one makes it, while love is only as one gives it. Man is not a passive instrument moved and directed by the three Fates who spin, twist, and sever the strands of the cord of life. Man's physical health grows out of his constitution, his inheritance, and his capacity to adjust to an external as well as to an internal environment. Man strives to make life a reality that reveals his worth for survival. A Scott dying at the Pole, a Byrd daring his all in an isolated ice cabin, a Piccard rising into the stratosphere, a Nellie Revell or Clarence Day having the courage to fight through and for life give as much reason for acknowledging that life reveals love as do the lives and efforts of St Francis Xavier, Florence Nightingale, and Jane Addams. Life is what one makes it in terms of intelligence, industry, principles, and ideals. Man assumes, makes hypotheses, frames theories, and fosters illusions that

drive him on to planned and unplanned goals. He strives to face his realities and to avoid neurotic escapes. His physical welfare aids him to strive for ego values that are in harmony with social approval and esteem. His internal growth has social meaning in relation to those external radiations that reflect his personality. He can guide his life and foster his personality trends in harmony with his needs for adaptation. His inadequacies result from the recency of his intellectual organization as compared with the ancient mechanisms for response at the reflex and instinctive level. His life patterns remain too primitive for the world he has created. The animal in man continues to retard his spiritual evolution.

Life is being, breathing, animation, movement. Its immediate continuance and survival depends upon nutrition, its future continuity and temporal survival is an outgrowth of nutritional dysharmonies between area and cubic contents. This holds true among unicellular animals but the principle of nutrition as a factor in cell reproduction persists in the human species as noted during the development of an ovum into a placentally nourished being.

Man like all animals finds himself caught up in a mechanism of attraction that facilitates the continuity of life but does not necessarily eventuate in love. Chemotropism may be effective for mating, when it is based upon olfactory stimuli and responses. The visual and auditory functions may afford a more differentiating reactivity which may conduce to the exercise of the sexual function or may be organized into a true amatory system.

Love, as one gives it, is in response to a living synthesis, it is not a material product of some specific glands or viscera, it is not a purposed response based upon intellectual evaluations. It is not a secondary efflorescence of knowledge but a primary organismic reaction. Love has its own ontogeny separate from sexual capability or urge. The sex drive is diffuse, impersonal, and undifferentiated whether its direction be autoerotic, homosexual or heterosexual. Love has focus and personal direction and is not necessarily determined at the genital level. This becomes evident in intersibling love, maternal love, and love of God.

Sexual excitement from imagined situations or dreams, by day or night, are not based upon touch although tender emotion may enter into the phantasy. Hand holding, or other manipulations may facilitate love but it does not compel it—it may even destroy it. The lack of touch in the presence of modesty may be even more effective in creating desire and fomenting love.

Love remains undefined, logicians, endocrinologists, philosophers, and metaphysicians have failed to penetrate the mysteries of its existence. It is a part of life—a natural phase essential for the race and dependent upon the individual. Is it, as Schopenhauer alleged, merely “a temporary delusion of the individual in the interest of the race?” If love be delusion or illusion its achievements are the richest realities of life.

Havelock Ellis states

Love, in the sexual sense is summarily considered, a synthesis of lust (in the primitive and uncolored sense of sexual emotion) and friendship.

The sexual emotion is inherent, the friendship becomes subject to volitional direction. Love then is as one gives it—but one gives it as one feels it—and one feels it in terms of sexual emotion which is an essential of life. The very capacity for giving love makes it possible to find enrichment in life as one makes it.

II Adagio patetico—Ma non troppo

Life is not all rejoicing—tragedy most reasonably must be antidoted by comedy. The course of true love is not ever that of Romeo and Juliet. Man since he roamed the forests, slept in caves, and sought escape from the saber-toothed tiger has dared to face his trials and has fought for life and for love. He has lived and suffered, he has died with a cheer on his lips, he has made the supreme sacrifice that another might live. He has loved unwisely and too well, he has suffered ostracism, humiliation, disgrace for his love, he has fought and died for fair ladies of high and low rank. He has thrived upon his vigor and aggressiveness, his pains and sufferings, his submissions and frustrations. “Love is full of fear.” “Love is lawless” wrote Chaucer, but fear and lawlessness are part of man’s primitive psychologic possessions

—flight and fight—flight and flight have been among his vital polarities. In his moments of sad meditation he reflects, *we are as life moulds us and love rules all reason*.

Gone is the elation that life is born in freedom and grows in independence. We are shackled by physical and intellectual limitations and our Pegasus falls short of Olympus. Love mitigates human limitations as it seizes control of various untoward circumstances of life and fosters new strength from interdependence even as it may sap vitality and deny strength through the encouragement of dependence.

What antithetic though supportive values arise from the discipline of life and love undisciplined—from a life of directed learning and doing in the presence of love with its wealth of unleashed feeling and experiencings. The romances of life are founded on love and the life of romances is limited by love. Adolescent desires are not mere sensuality but love’s awakening. Life and love together surge and merge during those years when an alternating current dominates growth and development, when esthetics and ethics, aspirations and ideals are formulated through an emotional reorganization based upon a physical evolution and a psychical metamorphosis. Behold, a man! Behold, a woman! How far from the cry “see the boy”—“see the girl.” This is the age of conflict, of doubt, of challenge, of fears of temerity, of love and hate. This is the renewal of life and love along more mature creative levels in relation to the self, the group, the world. This is the age of initiation and social union during which develop trends that may produce a faithful Lochinvar or a faithless Lothario, a loving wifely Penelope, a loved mistress a la Mme Pompadour or a loveless member of what, in the days of Catherine de Medici, was known as the Queen’s Flying Squadron.

The gregarious trend makes loneliness a curse and man’s gregarious values find expression in love of every form and the essential of his sapience lies in the spiritualizing qualities of his social attractiveness and attractedness which he seeks to harmonize with his materialistic satisfactions at the biological level. The place of the hymen in life and love attests the eco-

to social mandate although they may be subject to control and regulation. The protection of the young and the establishment of parental attitudes are as understandably related to personal interest and self-satisfaction as clothing habits and daily dietaries.

The hormones are overstressed for love although not for living and for responsiveness to the stimulating caresses of love. The hormones fundamentally are of physical importance and secondarily enter into the psychic state attributed to love. Let me consider this in greater detail.

The hormone derived from the testis is not a testicular stimulant although it helps in controlling the accessory reproductive organs. This hormone, like sex hormones generally, conditions an ability to handle sex products and enables animals to respond characteristically and at a time proper to ensure the propagation of the race. The psychic response to sex attractiveness however, depends upon elements not entirely under hormone influence. Thus castrated guinea pigs will continue to pursue females, just as impotent human males will sense love without capacity for expressing it in a physical way. As Carl Moore stated (*J.A.M.A.* 4/20/35) "Mating instincts, or the copulatory desires, are extremely complicated and involve so many factors of mentality that it becomes questionable how important testis hormone is in inducing particular psychic states." This is manifest in the promiscuity of eunuchs.

There is no direct evidence, then, that the testis hormone sharpens mentality, prolongs life or that the lack of it is responsible for any consistent inadequacy in development. Injections of the testis hormone into young normal males appear to suppress the growth of the testis. The main value of the testicular hormone lies in its promotion of physical growth rather than in psychical reactions. Thus the testis hormone, while an essential in the facilitation of sexual life, is not a requisite for love.

The estrus period of intense female sex urge does not operate as a limiting factor in human mating. The ovarian hormone primarily fosters growth rather than a sensory receptivity on a non-sexual basis. The evidence that estrogenic principles or

substances induce the growth of vaginal epithelium of animals does not even demonstrate whether such organic responses arise directly from ovarian activity or from some indirect influence of the anterior pituitary gland. The ovarian hormone affords little information concerning sexual receptivity despite its relations to the manifestations of secondary sex activity. The phenomenon of frigidity is not interpretable in terms of the ovarian hormone. It may be true that the sex drive toward the mating goal is partially dependent upon the ovarian follicular hormone just as it appears to be true that the estrogenic substance may induce normal puberty. A double oophorectomy, however, does not destroy sexual receptivity, lessen vaginal secretion, inhibit orgasm or diminish love. The corpus luteum hormone functions in relation to pregnancy, whether the result of artificial insemination, rape, purposed mating or an impulsive expression of deep love.

The sexual urge is not directed then by the operation of the gonads. Some force lies behind its direction and its control. One notes homosexual trends among animals below man and among men. Homosexuality is not counteracted by endocrines nor destroyed by heterosexual excitation. There may be a conscious effort at redirection of sex interest to meet oppressive mores, but the basic psychic tropism remains, regardless of the physical perfection of the sexual organs. Thus far no organic differences have been reported between the gonads of homosexuals and heterosexual beings.

Is love, as Watson has urged, merely a variation and development of the sense of touch? This is as doubtful as it is ancient. Its absurdity issues from Bain's comments on parental love. "In mere tender emotion not sexual, there is nothing but the sense of touch to gratify, unless we assume the occult magnetic influences. In a word our love pleasures begin and end in sensual contact. Touch is both the alpha and omega of affection." This may be touching but in relation to the pleasure reaction, does the touch create the pleasure or does an idea of pleasure promote the act of touching? Certainly love is not an extension of touch unless one regards all sensation, visual, auditory, olfactory, and the like as essentially touch.

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Adler contends that the libido serves to exalt the Nietzschean will to power and that the masculine protest aims to maximize the ego in compensation for the inferiority complex. This interpretation ignores the feeling phase of conscious activity even though the feelings are of unconscious origin. Man's love life and goals are not fixed by infantile repressions nor by unconscious conflicts.

Lord Lytton said "Love can hope where reason would despair." Thus love exalts the mind but as Dryden implied only after the blood is fired—the "blood which is the life thereof." Thus the older mechanism of life is katalytic for its renewal and operates through the senses that it serves and finds response in the inherent mechanisms that long anteceded intelligence with its power over abstractions. Love involves imagination, intuition, and preferential desires past understanding which lead to actions wise and otherwise, in harmony or disharmony with calm logic and reasoned decision. This is part of the tragedy of life and the weakness of the strength of love.

Love's course is not free from pain and suffering, doubt and trial, struggle and friction, anxiety and sorrow, fear and jealousy, grief and frustration. It is not always triumphant when it triumphs, nor does it always flourish because it is successful at the moment of greatest need. Love may become a religion and its worshiper may be transformed into a fanatic or, losing faith, accept cynicism. Man doth not live by bread alone nor do his material advantages always direct his life and love. A splendid feature of both is found in his acts of faith beyond his daily knowing.

Love, like life, is complex, a vitalized and vitalizing X with potentials to the *n*-th degree. Life without emotion is static. Love is the most dynamic of emotions because it possesses a sphere of influence far beyond the limitations of human thought. There is nothing that love will not essay and little that it rejects as beyond its power. The explanation

is clear in that love is a compound emotion, interwoven with fear, anger, joy, faith, and all their opposites. When these are personally focused their power is intense, when they are diffused throughout the world they still have moving qualities. The sexual urge as a blind force does not possess these emotional characteristics which are outgrowths of human relationships—not so much outgrowths of a respect for the body as of respect for people. The sexual force that drives a rapist finds its incitement at a ganglionic level. The love motive may be intense in the presence of a castration impotence. The isolated sex urge is more amenable to conscious control than sexual desire magnified by love, because the former contains greater neurologic localization while the latter is due to an organismic diffusion of many intensities. The love enhancing idealizations of love are not acts of reason but of feeling. To these Freud pays this tribute: "Sexual over-estimation is the origin of the peculiar state of being in love." The love object by identification is treated as one's own ego—in a natural progression from autoeroticism. This interpretation does not answer the question, what gives rise to the sexual overstimulation?

The lives broken on the wheel of love, the suffering from the poignant fear in love, the revengeful anger at threats to love, the destructive sorrows at the loss of love are the burden of public news. The successes, the exaltations, the finer repercussions of love upon life are accepted as the normal trends of life. The news values are found in those instances when love rushes past reason, ignores discretion and impulsively claims its own whether by sash weight or elopement, by deception, fraud or crime. When the superego is futile to restrain, when it is lost in alcohol or narcotic, when it is paralyzed by a volcanic blast, man ignores his consciousness and all its social colorings and lives again on a level that becomes an apology for his differentiation as a thinking animal. Original sin still plays a mystic part on the stage of the miracle play, called life.

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conomic values of priority in sexual possession which became translated into religious virtues following which the idea of masculine love was correlated with what Milton referred to as "the sage and serious doctrine of virginity," with the pure, the good life of the female. This, however, was not what Bacon meant when he said "love is nothing else but goodness put in motion or applied." It relates rather to Freud's confirmation of his judgment "that the belief in the 'goodness' of man's nature, is one of those unfortunate illusions from which mankind expects some kind of beautifying or amelioration of their lot, but which in reality bring only disaster" (New Intro Lects P 142).

Another gregarious organization exists in the biological social structuralization of human functions. Thus in the male at one time one may find the boy, the man, the husband, the father, and in the female the girl, the woman, the wife, the mother. In the male also may be found the female and in the female the male and this is essential in the Jungian concept of bisexuality with the antithetic attributes derived from the conscious and unconscious levels, from the persona and the anima. These are neither fusions nor separates in living but are concurrent, concomitant, interacting, even though often antagonistic. A male may love as a man and hate as a father just as a female may hate as a woman and love as a mother.

Life is a determinism probably as subject to variation by conscious determination as by unconscious demands. Love is a direction of life subject to ebb and flow from unconscious rather than conscious sources. Some moulding elements are conventional but have the force of incomplete determinisms. These appear in life in terms of national dress, state religions and linguistic forms, just as in love they occur in social opinions, sentiments, and judgments concerning the age of consent, miscegenation, and monogamy. A considerable measure of social regulation of the sex impulses is based upon society's interest in racial continuity rather than in terms of personal necessity. Society is concerned with love only as it operates through mating to produce life. The social meaning of love inheres in the possibilities of permanency of marriage and the

continuity of reproduction. Hence the reaction against birth control among those nations desirous of the more abundant life for sacrifice to the God of War whom Venus so generously serves, even though she may cause hideous scars.

Life presses upon us and its mould often slows personal progress and happiness. The friction with the world retards free action. We cannot run, jump, scream or sing as we wish any more than we may love when, where, and whom we desire. Human impulses and instincts require some brake—now more, now less, in terms of the conflict of love and reason, feeling and logic, satisfaction of need and ethical indications. The very limitations of physical organization, of mental powers or spiritual concepts enter into the art of love and increase its personal values. It is the shadow that makes the light brighter and there is no light without shadow.

According to Freud, our instinctual life rules us and the sexual libido—sexual energy—sexual desires—motivate our lives. We are not Watsonian creatures, without memory or consciousness, acting by conditioned responses to visceral, muscular, and situational stimuli, but are living and loving in terms of instinctual activity. In the language of Freud

An instinct differs from a stimulus in that it arises from sources of stimulation within the body, operates as a constant force, and is such that the subject cannot escape from it by flight as he can from an external stimulus. An instinct may be described as having a source, an object, and an aim. The source is a state of excitation within the body, and its aim is to remove that excitation, in the course of its path from its source to the attainment of its aim, the instinct becomes operative mentally.

It is gratifying to find Freud, in his discussion stating "It must be freely admitted, however, that we are not very clear about the explanation of this." In truth the rule of love over reason is beyond reason and the explanation lies not in the ego or the "id" nor in the censorious activities of the superego. Man is no more a psychical pawn than he is an economic pawn. Libidinous determinism exists to some degree, so does economic determinism, but so do gonadal and barometric determinism. Life and love are both, in part, automatic and in part

regulated, both in part determined and, in part, free. Instinctive behavior with polymorphous propensities is as true in the field of life as in the field of love, but in both instances the organism is not beyond the power of conscious adaptation.

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III Scherzo

The world may be mine oyster "to open with a sword," but the oyster has a world it calls its own. Sheridan in *The Critic* realizes "An oyster may be crossed in love." One man's meat is another man's poison, one man's love is another man's hate. The man of love was called the man of sorrows. Life is tame, life is wild, and love takes the pace and often makes it. Springtime, youth, and thoughts of love are accompanied by marbles and bockbeer while

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The sap is running, the brooks rush and overflow their banks, the returning birds build new nests, the resurrection of life is at hand and love resurges, new life, new love, and thoughts of "the bank where the wild thyme grows." Life is seen in resplendent activity toward the goal of its own renewal. Nature is in love. Life pursues love and love pursues life with rapture and laughter. In the merry current of vitality, life is a joke, love a jest—both are but a game to play. Little it matters who the winner be. The sympathetic magic of Nature awakens all to movement in the spirit of Brabantio's declaration that Othello bewitched Desdemona with "drugs to waken motion."

The world looks good, it pleases, it arouses desire for beautiful gardens, but, *gaudeamus igitur*, also for wine, women, and song. A veritable Dionysic revel develops and to the mighty irresistible god of fertility the earth and man pay joyous tribute. It is "On with the dance, let joy be unconfined." And the satyrs leap to their musical instruments, rush to voluptuous dances with the nymphs. The luxuriant vitalizing powers of nature magically entered into rites and ceremonies symbolic of fertile creation as varied as the swing, the Maypole and Temple prostitution. Throughout the aeons man has repeated his pleasure in pageant and festival at the continuance of life and the reappearance of the warmth that bespeaks fire—the fire that to him betokens love.

The physical changes of the world and man are evolutionary but they give rise

to psychic modifications of attitudes. *Uranian* pleasure until recently was not accepted as normal for women and the knowledge of such was tantamount to an admission of abnormality or immorality. Passion was not denied; it was the relic of a service to the gods for the seduction of the sons of Adam. Note carefully that Adam's daughter was not named but one hears much of the daughters of Eve. The serpent was to blame and today also "The devil has power to assume pleasing shape." In the Bible he "can cite Scripture for his purpose." Times have changed and the magic of witchery has fallen to reveal the seductive charms of females who lack neither the skill of their ancestral sisters, although emissaries of the Devil, nor the ardor of their brothers through Adam and Eve's lively rib.

One ever notes the conflict of the forces of good and evil—love and passion and death. Man's life is but the confluence of streams of past consciousness and their rushing over the dam of present necessities. The purling brook needs pebbles, the loud sounding sea needs a shoal, the course of life foams only over obstacles and dashes with most force where there is most resistance. Life's jests and love's jests are but beatings against obstacles within and without. The forces of Nature and man are not immutable; neither are their behaviors or personalities. This is the basis of evolution. Life is conflict and the pursuit of its solution and love laughs until it is caught in the maelstrom of its own fluidity. Then laughter is drowned in tears.

According to Sully, laughter is due to a sudden release from a strained or tense situation, while Freud alleges that it is a mode of relief from inhibitory or repressive processes. Let us laugh at the world and be relaxed as we escape the necessity of their generalizations. It may be real and earnest but an early grave would be a welcome grave, if it were stripped of laughter. Life is not pleasure or all pain, but the balance between mediocrity or the golden mean is in part subject to the rule of laughter. Wisdom does Patrick, George T W., not the Sannyasins write.

Custom and civilization forever urge upon us the conventional, the decorous, the

derly, the customary, the usual, the regular, the coherent, the congruous, the proper, the refined, and the logical. What we laugh at is the unconventional, the indecorous, the disorderly, the unaccustomed, the unusual, the irregular, the incoherent, the incongruous, the improper, the unrefined, the illogical, the nonsensical, and the eccentric.

We laugh at the tyrannies of convention, snap our fingers, chortle and guffaw, we satirize and try to laugh out of existence what we regard as unworthy of existence. Laugh and the world laughs with you, but if you can't see the joke, the world laughs at you.

Life offers only a few joke models for laughter and rarely do they relate to the depths of human feelings. There are of course antitheistic museums mocking the religious ideas of a future life but rarely are there jokes upon life as continuance. We laugh at death to show we are not afraid to die, we laugh at life to show we are not afraid to live. We laugh at love, lest love laugh at us.

In the physical world we are moved to pleasure reactions by incongruities, by deviations from our fancied norms and by all that allows us to gain, maintain, or advance a sense of superiority. We laugh at the hands larger than our own, the mouth that's queer, the face too white or too red, the dog faced boy, the lisping man, the fat girl, and at countless freaks of nature, so long as we are not included. We laugh at indecision and uncertainty and at the staggering gait of a genial inebriate. Whatever is strange arouses our risibilities, whether it be a Hottentot apron, a Tibetan tonsure, the birth of twins or the practice of couvade. We laugh at such trifles as slips of the body, a slip on the banana peel, a slip of the tongue and, dare I say, the slip of a girl. We laugh at lapses of the mind, when we forget to remember and seemingly remember to forget—especially names, faces and past promises or possible performances.

How we laugh at love when it avoids life, and when it throttles it! For 500 years men have chanted "Follow love and it will flee thee, flee love and it will follow thee," but the chant is not heard during the enchantment. And "All the world loves a lover" though it laughs when "The cuckold and the cuckold-

maker are at it." Love shakes and shivers at flirtation and courtship, revels in phantasy and idealization, and spends freely in companionship, even giving lavishly, asking little in return. Love is more blood thirsty than the pelican because, cannibal that it is, it feeds and thrives on its own blood. Living on love is not an economy of life but loving to live may cause an economy of love.

Life and love rebel against the harsh rule of the good, the true, and the beautiful and both find self-conscious pleasure in what the good call the evil of life and what the evil term its good. Let me suggest a few contrasts. We laugh at sexual power and sexual impotence—the over-ambitious sheik and the drunken Silenus, at the pretense of creaking age acting as though grease paint could lubricate dry joints, at addled youth simulating Casanova. We laugh at beauty and ugliness, at smartness and smut, at Gilbertian love-lorn maidens and foppish esthetes, we laugh at every deviate from our own anatomic, physiologic and psychic norm, whether sexual feeling is actually involved or merely implied, hence many arrogantly and often jeeringly laugh at homosexuals as they discourse of them in epithets floral. We laugh at inverters and enjoy being laughed at when we masquerade in apparel of the other sex. The deviate in sexual practice is an object of interest and no conversation is more welcome than that revealing the love life of one's neighbor. How sterile conversation would be if there were no discussions of doubtful amours and how social two can become over *The Well of Loneliness*. Sexual curiosity is the secret influence behind the pleasure, if not the excitement, in reading *The Canterbury Tales*, *The Decameron*, *Heptameron*, *Hudibras*, *Lady Chatterly's Lover*, or even some of the appealing pages of *Anthony Adverse*, not to mention the more flagrant though surreptitious baldness of high priced and low-leveled curiosa, erotica, and pandering pornography.

We laugh at prigs and prudes whose lips, pursed for prunes and prisms, are never pressed in osculatory play. We find our imaginations stretching to coin descriptive synonyms for women of the street that will not fade the parlor rugs—and we banish the Devil from our

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The physical changes of the world and man are evolutionary but they give rise

to psychic modifications of attitudes. Sexual pleasure until recently was not accepted as normal for women and the acknowledgement of such was tantamount to an admission of abnormality or gross immorality. Passion was not denied but it was the relic of a service to the Devil for the seduction of the sons of Adam. Note carefully that Adam's daughters are not named but one hears much of the daughters of Eve. The serpent was to blame and today also "The devil hath power to assume pleasing shape." Indeed he "can cite Scripture for his purpose." Times have changed and the mask of witchery has fallen to reveal the seductive charms of females who lack neither the skill of their ancestral sisters, alleged emissaries of the Devil, nor the ardor of their brothers through Adam and his lively rib.

One ever notes the conflict of the forces of good and evil—love and passion—life and death. Man's life is but the confluence of streams of past consciousness and their rushing over the dam of present necessities. The purling brook needs the pebbles, the loud sounding sea needs the shoal, the course of life foams only over obstacles and dashes with most force where there is most resistance. Life's joke and love's jest are but beatings against obstacles within and without. The laws of Nature and man are not immutable, neither are their behaviors or personalities. This is the basis of evolution. Life is conflict and the pursuit of its solution, and love laughs until it is caught in the maelstrom of its own fluidity. Then laughter is drowned in tears.

According to Sully, laughter is due to a sudden release from a strained and tense situation, while Freud alleges that it is a mode of relief from inhibitory and repressive processes. Let us laugh at them both and be relaxed as we escape the necessity of their generalizations. Life may be real and earnest but an early grave would be a welcome grave, if it were stripped of laughter. Life is not all pleasure or all pain, but the balanced mediocrity or the golden mean is in part subject to the rule of laughter. Wisely does Patrick, George T W, not the Saint, write

Custom and civilization forever urge upon us the conventional, the decorous the or-

labor to consider well of love, whether it be a god or a devil, or passion of the mind, or partly god, partly devil, partly passion." The immortal humor finds expression in the truth that we have this psychosexual trinity not merely the dualism of man and woman

IV Finale—Grave—Allegro—Lentement—Sostenuto—Esto Perpetua

In the writings of Kwang-3ZE concerning The Full Understanding of Life one finds this challenge "He who understands the conditions of Life does not strive after what is of no use to life and he who understands the conditions of Destiny does not strive after what is beyond the reach of Knowledge." We do not fully understand, so we continue to strive for fuller and deeper knowledge to satisfy our longings. Frequently in traversing the field of exploration we travel in a circle and return to the place from which we started but with a conviction that we have made progress

The psychologist defines organic life as "a form of organization found in certain material things, having the properties of self-perpetuation, for a longer or shorter time, and of reproduction in some form" The spiritual life involves the self-conscious development of moral, esthetic, and religious experiences which lessen carnality and lead to the expansions of sympathetic tender feelings that transcend past planes of personal interest in self-aggrandizement at the expense of the degradation of others

Love as an exclusive dispositional interest is manifested in emotional states. Psychologically love may be differentiated into that growing from and constituted by the natural affections and that which is not wholly dependent upon innate natural values. The former is represented by the development of maternal affection and other forms which do not involve mating as a goal. The latter involves the range of human interests and the gamut of emotional potentials from impulsive urges to intellectual decisions caught up in esthetics and morals, principles and ideals. Both forms may find expression for persons of the same sex and be clothed in the motley or panoply of romance, in which the interest value is compelling in its exclusiveness. It is the

romantic spirit which strives for union. In the language of Disraeli "We are all born for love. It is the principle of existence and its only end." Veritably life without love is dying, just as love without life is withering. The emotional life of complying prostitutes, cooperative pervers, aggressive rapists, and those who pursue a life flamed with passion does not represent the element of love. It reflects only the urgent physical basis of mating. Love is of the spirit rather than the flesh and is akin to life itself—it is growth rather than mere self-expression. In love the sensual element is a means rather than an end—a diffused factor for mutual spiritual advancement rather than a localized soulless gratification. The inherent power of life was represented among the Egyptians by the Ankh which was formed of the Lingam and Yoni, the symbols of the masculine and feminine generative organs. Life was generation—life is generation. Love is generation whether in terms of the flesh or the spirit.

March 25th is Annunciation Day and throughout the world millions offer special prayers to the Virgin, whose own immaculate conception and chaste characteristics as a Madonna, a mater theon, exemplifies a new life, conceived without lustful thought and without reference to physical contacts. In a sense it implies that love brings forth life even as in worldly thought life triumphs in love.

The inspiring epics of nations, the great dramas of music, the mythologies of the world, the literature of all tongues, the artistic creations of all ages, reveal the interweaving of gods and men, the interplay of forces that make men rise and fall, but ever with tender feeling and love vivifying, purifying, transforming, and spiritualizing. Life and love have a kinship with the eternal verities. Rochefoucauld may be right "The pleasure of love is in loving. We are happier in the passion we feel than in what we inspire." This is especially true when we consider that passion as amorous feeling is a form of suffering, a state of intense eagerness to serve and to possess, an overpowering feeling that continues to make life a state of exaltation. Love is a state of being. Life and love are united in origin, direction, goal.

Creation, "whose body nature is, and

thoughts but only after he has played the part with them. We laugh at "The woman who did" and the regretful man who didn't. We laugh at faint-hearted defeat and bold success in sexual sallies and know not why, except—well, *c'est la guerre*.

They say love laughs at locksmiths but locksmiths do not laugh at love—they build better locks at which love laughs again, especially if they be attached to Girdles of Venus. Sexual life, refulgent with passion, is but a great event casting its shadow before it. Sexual feeling, sexual pleasure, sexual attachment, sexual fulfillment are but spurs to fertilization. Even the preparations for marriage, with or without love as attendant, are made festive with ceremonies symbolizing fertility rather than love, bespeaking, prophesizing, exhorting, assuming the promise of a new life. This is the meaning of the Song of Songs, of the rice and old shoes, but it is also the essence of the 128th Psalm formerly sung by priests and choir—"Thy wife shall be as a fruitful vine by the sides of thine house, thy children like olive plants about thy table."

All this relates to marriage—and marriage is no joke. One does not laugh at marriage but at those who marry, their natures, compatibilities, surprises, disappointments, shocks at facing realities. It is the incongruities, real and fancied, that conjure laughter in the presence of the hopeful countenance of love, believing and yielding. We laugh at Titania whose open eyes, blinded by Puck at the behest of Oberon, find the love light in the eyes of Bottom the Weaver, with an ass's head, especially when she exclaims with deep emotion "Thou art wise as thou art beautiful." We do not laugh at the love of Tristan and Isolde generated by a life saving love philtre. Both loves were equally real and what each of the lovers saw in the other was felicitous, promising, overwhelming. Both were in love beyond reason, both lacked consummation, both represented Emerson's idea that every soul to another soul is a Celestial Venus. Both were released from the harsh realities of life to the real harshness of love frustrated.

Anyone's love or love life may appear to be a joke to another, to whom the special love experience affords no illusion and

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Love is a liberation that enables soul to touch soul and forget all else even the body. It yields a tremendous freedom from conscious tensions and restraint that facilitates the actual expansion of life and love for noble adventures in mutual living. The joy motive and the joy goal cooperate for emotional release. The heart beats throb, the breath comes fast, the blood rushes with its soul sweeping aphrodisia and the Dance of Life is on. Music, music—art, poetry, dancing till dawn reddens the eyelids of tired but laughing eyes, drinking in the aromas of the distillates of love, courting and its tempting love-play, and love races on through two transported, transformed, mutually desiring beings. There are some threats to this life of appealing pursuit and the thoughtless laughter of love lest the Dance of Life turn into The Dance of Death—but blind life and blinder love do not glumpse them. The Dance of Life and Love goes on and on, while Epicurus nods approval that the highest good and happiness are found in pleasure to which these natural impulses are directed. Only the wiser Epicureans realize that it is not the pleasure of the moment that is significant but the enduring condition of joyousness and contentment in pleasure which ever ensures freedom from pain.

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Memory is good. School knowledge is largely retained.

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611 WEST 158 ST

PROFESSOR MOLINERY HONORED AT LUNCHEON

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After mentioning that the ancient Greeks and Romans already knew the therapeutic effects of mineral waters which they called "sources of youth," Dr Molnery talked of the cures of thousands of French and American soldiers, during the World War, in French spas.

In view of the outstanding results obtained, the French medical schools officially adopted the teaching of hydro-climatic therapeutics. Ten chairs were created. Professor Villaret being the first to teach this new subject. Thereafter scientific institutes and laboratories were instituted near the principal spas. As a final step in this evolution national and international conferences were organized which many eminent Ameri-

can doctors attended.

Dr Molnery then explained the effect of mineral waters upon the organism and indicated that in order to obtain an effective cure the mineral waters must be given to the human being in the early years of life, i.e., a *preventive cure* must be undertaken. He also called attention to the social advantages of such a cure. An international exchange of children to the various thermal stations of the world would not only be beneficial from a standpoint of health but also of international rapprochement.

Dr Molnery came to New York on the Normandie as a delegate from the Latin Medical Union which groups thousands of physicians from thirty-four countries.

Professor Molnery is professor of the Medical School at Toulouse, Laureate of the Academy of Medicine of Paris, and General Secretary of the Union Medicale Latine.

God the soul" is the spiritualizing as well as the vitalizing truth of the universe. The song of the lark at dawn, the multi-colored palette of the sky as the reddened sun disappears in the west tell of a beginning and an end of a day that, in the cycle of continuity, has neither beginning nor end. The death of the old year is the beginning of a new one. Man is a micro-cosmic creator and love is the spiritual equivalent of divinity in him. Life and love advance in the progression of men towards a life of greater understanding and with pure spiritual values that embrace all that is implied in the Brotherhood of man. "God is love" and love is God, the giver of life. Romance shall live on, invigorated, sustained, and furthered

by a conscious acceptance of the right to life and the right to love as inherent in the here as well as in the hereafter. Life and love in union—creating and created—created and creating.

The fertilized ovum and the cosmic egg alike suggest a continuity of activity towards unknown and unexplored destinies, both contain within their physical limits unlimited potentials for life and love. Both are dynamic in inner meaning, vibrating like sounding brass in a symphonic climax that proclaims to all mankind

"One God, one law, one element,
And one far-off divine event
To which the whole creation moves"

264 W 73 St

BETWEEN MENTAL HEALTH AND MENTAL DISEASE

B LIBER, M.D., DR.P.H., New York City

Editorial Note Under this title will appear short summaries of "transition cases" from the service of this author in the New York Polyclinic Medical School and Hospital. The descriptions are not complete clinical studies, but will accentuate situations from the point of view of individual mental hygiene such as crop up in the every day practice of medicine.

Fright

What has happened to this man? He was a witty joyous fellow, beloved by his wife and friends. Tolerant—would give full freedom to his children who were always happy to see him. But, he has lost considerable weight, has become irritable, nervous, is nagging everybody in the house, threatens and whips the children, has no appetite, sleeps restlessly, talks but little, cannot walk more than a block and is afraid of his shadow.

For the last few months he has seen many physicians, has been under observation in the hospital for weeks. He stands in awe before the accuracy of the modern machines and apparatus with which he has been examined.

But nobody found his true condition and nobody helped him. All the guesses were interesting but somehow they did not fit. He had the gripe and cardiac trouble, was suspicious for stomach ulcer, suffered from anemia, obesity, low metabolism, angina pectoris.

The change in this man coincided with his new occupation, that is, it began after he had worked at his new job for a few months. He had been assigned the duty of collecting weekly installment money from poor workers for shining but cheap furniture bought at extremely high prices from a large and rich firm. The petty thieves of his section noticed him and attacked him several times, removing from his pockets the few dollars he had obtained on a morning or evening from his clients. A few times he was beaten up. Once marched up the stairs of a house and tied to a pole on the roof and left there—he stayed for hours until his cries were heard.

That frightened him and started his subconscious escape into a nervousness and weakness which made it impossible for him to go collecting. Therefore he was actually unable to do so. Another job cured this patient promptly.

But the diagnosis was made by thorough questioning, intelligent analysis, and by the knowledge of economic conditions.

A "Sleeping Problem"

A boy of twenty-two, born of New England stock in a small town in Massachusetts, where he finished high school and where his parents, fifty-three and fifty-one, are still living. His father, a printer, is, according to patient, a heavy drinker and the

only domestic conflicts arising between the parents are due to that fact. The mother seems to have the same character and leanings as the boy. Until about four years ago patient was successful in sports. But after a few knockouts with the ball and

taunting spells and a hurt of the right leg, which he still feels, he discontinued playing baseball and other games. Family history seems negative as far as mental disease is concerned. There is one older and married sister with whom patient is living in New York. As a child patient had the ordinary children's illnesses and, before six, typhoid fever, although he is not certain—it might have been scarlet fever.

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EDITORIALS

A Strange Defender

The Committee on Legislative Activities of the American Medical Association calls the profession's attention to a recent suggestion by a public official to the effect that medical organization place itself under the supervision of some group like the Better Business Bureau or Chamber of Commerce if it cannot correct its own defects and maintain desirable standards. In view of the fact that the majority of physicians are imbued with an idealistic purpose that far transcends the industrial motive—and that the Better Business Bureau and Chamber of Commerce are just starting to do what the medical profession has done for centuries—this seems like a drastic and somewhat illogical proposal.

It is true that the ethical principles imposed by organized medicine have not the force of law. Neither, however, have those of the Better Business Bureau or Chamber of Commerce, and it is safe to say that the code of medical ethics is more generally and strictly observed than the comparable rules laid down by the various business organizations.

On the other hand, the faults that may justifiably be attributed to individual practitioners are viewed with greater clarity and more heartily condemned by the profession than they could ever be by a

business group accustomed to the grosser manifestations of the profit motive. Excessive charges, unnecessary service, and unfair collection methods occur in medicine as elsewhere but they are the exception rather than the rule and can be dealt with more effectively by professional institutions than by any outside organization.

The profession itself has long deplored its lack of power to mete out adequate discipline to habitual violators of the ethical code. This is the fault of the state which for some obscure reason hesitates to give the principles of medical conduct the statutory force which the legal code enjoys. Under any circumstances, however, whether voluntary or compulsory, there is no better guardian of medical ethics than the organized medical profession.

A Trustworthy Guide

One of the great weaknesses of organized medical efforts to suppress false and misleading advertising of foods, drugs, and cosmetics lies in the failure of practitioners, acting singly, to abide by the collective judgment. Although the profession as a whole warmly endorses and respects the idea underlying such a body as the Council on Pharmacy and Chemis-

try of the A M A, for example, many physicians have small scruple about disregarding its recommendations. This indifference or inertia is a deathblow to maximum accomplishment. The endorsement or repudiation of a particular product derives its practical force from the support of individuals.

There are several aspects of *New and Non-Official Remedies* deserving of professional consideration. In the first place, inclusion in the approved list offers a criterion of merit, both as to a preparation itself and the claims made for it. The prescribing physician and the consuming patient are assured of purity and potency in the product and truth in its advertisements.

The use of unaccepted remedies by the public is understandable. It is foolish and reprehensible in physicians, who owe it to themselves as well as the laity to be sure of the preparations they employ and discourage the self-medications springing from misleading advertising.

There is a third party to be considered in addition to physician and patient. The manufacturer who abides by the rules and restricts his advertising at the behest of the profession is entitled to professional support. It is not fair to circumscribe him with ethical restrictions and then patronize less scrupulous firms that exceed those limits.

Organized medicine is waging an unceasing battle for safe, effective medications and truthful statement of the claims for them. It has accomplished a great deal already by the force of informed professional opinion. Full realization of its goal waits on more active support by the individual practitioner.

Mental Health

Mental hygiene, or, better still, mental "health," a term suggested by Casparis¹ is slowly but surely commanding the interest of the medical profession. We, who were ever concerned vitally in the preser-

vation of the physical well-being of humans, have been slow to recognize the importance of a well-balanced mental status. Perhaps this has resulted from our unequivocal acceptance of a "normal" and an "abnormal." Certain groups in the community realized the fallacy of such an arbitrary stand and have undertaken an educational program devoted to the training of the child's mind from infancy so that, in later years, the mental status might become "adequate."

With our realization of the importance of preventive psychiatry in children, it was but natural that we should resent the intrusion of these alien groups into a field which properly is ours. Poorly equipped, as many of them were, they nevertheless served their purpose in bringing this important phase of preventive medicine to our attention.

At present, our mental hygiene clinics treat cases wherein mental problems already have developed. When we shall have realized that there exists "no fundamental difference mentally between human beings at any age", we will then appreciate that "mental nutrition is made up largely of the satisfaction of accomplishment commensurate with one's ability to accomplish."¹ Add to this the courage to overcome unpleasantness, and one will then have an "adequate" mental status.

This aspect of medicine must have its inception in the medical curriculum. Its importance must be instilled into the student. It is hard to teach an old horse new tricks, particularly so when internship is synonymous for medical wisdom.

Therapeutic Value of Mountain Climate

Physicians are consulted constantly concerning the benefits to be derived from the different types of climate. Their opinions at times assume extreme importance since they may result in a complete change of their patients' environment with all the inevitable readjustments in their social and economic life added to their illness. Despite the importance of the

¹ Casparis, H. R. *J. A. M. A.* 106 2207 1936

NEW YORK STATE JOURNAL OF MEDICINE

Published Semi-Monthly under the Auspices of the Journal Management Committee

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The Committee on Legislative Activities of the American Medical Association calls the profession's attention to a recent suggestion by a public official to the effect that medical organization place itself under the supervision of some group like the Better Business Bureau or Chamber of Commerce if it cannot correct its own defects and maintain desirable standards. In view of the fact that the majority of physicians are imbued with an idealistic purpose that far transcends the industrial motive—and that the Better Business Bureau and Chamber of Commerce are just starting to do what the medical profession has done for centuries—this seems like a drastic and somewhat illogical proposal.

It is true that the ethical principles imposed by organized medicine have not the force of law. Neither, however, have those of the Better Business Bureau or Chamber of Commerce, and it is safe to say that the code of medical ethics is more generally and strictly observed than the comparable rules laid down by the various business organizations.

On the other hand, the faults that may justifiably be attributed to individual practitioners are viewed with greater clarity and more heartily condemned by the profession than they could ever be by a

business group accustomed to the grosser manifestations of the profit motive. Excessive charges, unnecessary service, and unfair collection methods occur in medicine as elsewhere but they are the exception rather than the rule and can be dealt with more effectively by professional institutions than by any outside organization.

The profession itself has long deplored its lack of power to mete out adequate discipline to habitual violators of the ethical code. This is the fault of the state which for some obscure reason hesitates to give the principles of medical conduct the statutory force which the legal code enjoys. Under any circumstances, however, whether voluntary or compulsory, there is no better guardian of medical ethics than the organized medical profession.

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about this program of socialized medicine. When these new state doctors come to treat you, and they find that your troubles are due largely to malnutrition and poor living conditions brought on by over-taxation, they will have to prescribe for you. Naturally, they will be unable to treat malnutrition and slum conditions with pills and tonics. For malnutrition, they will have to prescribe good food, and plenty of it, for slum conditions, better and cleaner homes. All these to be supplied, of course, at government expenses!

So, Mr. Forgotten Man, the road to

socialized medicine is a one-way road. It leads to complete socialism—from which there is no return. The time to stop is before you start on it. Let's vote—you and I—against any legislators who want to do more socializing at our expense. *If we must do something at public expense, let us buy the socializationists each a ONE-WAY ticket to Soviet Russia. There they may enjoy the results of socialization to their hearts' content! Why should they want to make over our country when they already have one made to their order!*"—*Medical Economic*, June, 1936

Society Activities

PNEUMONIA CONTROL PROGRAM

Supplementary Report of the Committee on Public Health and Medical Education covering the Pneumonia Control Program

Submitted to the House of Delegates, April 28, 1936

I Outline of the Plan by the Chairman of the Committee on Public Health and Medical Education

II Report of the Chairman of the Pneumonia Sub-Committee, cooperating organizations, advisory committee, etc. General plan, main features, outlined and adopted

III The Status of Serum Therapy in New York State, previous to January 1, 1936. Small amount used, reasons, methods now employed for typing and preparation of Type I serum which simplify and save time in diagnosis and treatment.

The Amount of Type I serum concentrated and distributed in New York State, exclusive of New York City by the State Health Department during the months of January, February and March 1936. Reports received by the State Health Department.

New York State spot maps of laboratories for typing and stations for serum distribution

IV The Activities of the Committee on Public Health and Medical Education, meetings with County Medical Societies. Spot map showing counties where meetings were held. List of speakers

V The JOURNAL's part in publicity. Special articles, editorials, comments, committee reports

VI Bureau of Public Relations' publicity newspapers, radio Governor Lehman-Commissioner Parran-President Sondern broadcast.

VII General Statement regarding present and proposed activities

I Outline of the Plan
by the

Chairman, Committee on Public Health and Medical Education

The Pneumonia Control Program now being carried on in this State had its origin as a result of a conference between the Committee on Public Relations of the State Medical Society, and representatives of the Metropolitan Life Insurance Company. This conference was called by Doctor James E. Sadlier, then Chairman of the Committee on Public Relations, to discuss the lack of nursing care in pneumonia. The Metropolitan Life Insurance Company had commented upon this in a discussion of its nursing service to its policy-holders. In this conference, to which the Chairman of the Committee on Public Health and Medical Education was invited, it was decided that many other phases regarding pneumonia besides nursing care should be studied, and that this study should be made by the Committee on Public Health and Medical Education rather than by the Committee on Public Relations. Immediately a sub-committee of the Committee on Public Health and Medical Education was given this matter for consideration. The sub-committee very soon reported that in view of the successful experience in the treatment of Type I cases of pneumonia with serum, a drive should be made for the extended use of this form of therapy. The Committee felt that little progress could be made until the State Department of Health through the Division of Laboratories and Research furnished physicians with the newer refined serum rather than the uncon-

responsibility which the doctor assumes in advising his patient, it is surprising to note how little informed the profession at large is upon the subject of climatology.

Writing upon one phase of this subject, Campbell¹ presents an analysis of the therapeutic value afforded by a change to high altitude. In this type of climate, all metabolic processes are intensified so that it is essential for a person who contemplates a change to the mountain air to possess a fair degree of reserve power. Consequently, cases of extreme exhaustion or decompensated cardiacs should avoid high altitudes. Likewise, sufferers from tuberculosis, asthma, hypo- and hypertension, neuroses, and circulatory lesions are far better off when they remain in low altitudes.

Campbell believes that high altitudes are indicated for all disorders wherein a change in the reaction of the patient is sought. Borderline and obscure cases will have their symptoms intensified so that they may become of diagnostic value. In general, it may be stated that any patient whose reserves are low should avoid a sojourn in mountain air. For such a person the increased metabolism required in this type of climate may spell disaster.

CURRENT COMMENT

" * * * 'FREE' MEDICAL CARE originally meant, and was originally administered, free to those who could not afford its cost. Since the time of inception of this phrase, its connotation has had a most liberal extension. A consideration of the pathogenesis of its abuse would occupy quite a lengthy chapter in an account of what ails modern medicine. For proper description of the word in the sense that so many of our recognized institutions are dispensing medical care, the help of Webster's unabridged dictionary is enlisted. Specifically, sections 9b and 13c respectively under 'free' would seem to be definitions that actually fit the crime 'departing more or less from faithfulness to the original,' and 'acting unrestrictedly, characterized by amplexness or a tendency to superfluity'.

Medical care that is free to everyone is a cost to some one, and though the burden fall upon the physician most heavily today, to-

morrow the piper will exact his toll from the public, who, in the last analysis, will suffer most acutely from inadequate medical care. The hospitals and the profession must arbitrate the differences of opinion they hold with regard to the objective which they profess in common: the provision of good medical care for rich and poor alike, by physicians enabled through their reasonable opportunity for economic security, to provide such care."—The foregoing from the *Bulletin of Queens County, N. Y.*

WRITING OF THE Fourth of July, the editors of the July 4 issue of *Today* state that "This is the day to remind you that 4,044 Americans were killed in the revolution which won their independence, and that since 1900, 4,290 Americans have been killed in the act of celebrating their glorious victory. The Conference of Mayors dug up this grim statistic as part of its campaign against fireworks."

IT IS WITH PLEASURE that we quote at length once more from the pen of Mr. J. Weston Welch, the compiler of the well-known *Handbook on State Medicine*. In his article he quotes from a conversation with a fictitious "average man": "The most recent addition to the 'free services' group is labeled social security. The government is going to pay me part of my wages when I am unemployed and also an old-age pension. But I understand that when the plan gets well under way, it will take 6 per cent from my weekly pay envelope. *** This plan may raise my security, but it will do so at the expense of my standard of living." The article continues: "You are right, Mr. Forgotten Man. The government is encroaching into your private domain. And it now threatens a more serious encroachment than any before attempted. I speak of socialized medicine. **** Malnutrition and germ-breeding slums are among the leading causes of disease. If the government taxes away a portion of your food and rent money in order to give you free medical care for the extra sickness caused by lack of money with which to buy enough food and shelter, I should like to know how it is improving your living status."

The present private medical system does not cost you anything like \$2.30 a week for your family, because doctors have a custom of sliding the scale downward when charging poorer patients, and because the doctor's creed does not permit him to turn aside any patient too poor to pay for his services.

And another thing, Mr. Forgotten Man,

¹ Campbell R. *Schw. Med. Woch.*, 66:396, 1936

deal particularly with early diagnosis and serum treatment of pneumonia

4 Stimulation of interest in county societies and other medical groups

One of the most important duties assigned to our Sub-Committee was to advise concerning the selection of a full time director for Pneumonia Control in the State Health Department. Doctor Edward S. Rogers, of Boston, was chosen for the position. Doctor Rogers is enthusiastic and has a well-functioning organization with headquarters in the Department of Health at Albany.

The Sub-Committee on Pneumonia surveys the results of the first season of our campaign with much satisfaction and believes that we have started a public health movement of great importance.

III Preliminary Report of the Bureau of Pneumonia Control

Division of Communicable Diseases, New York State Department of Health

The accompanying report of the activities of the Bureau of Pneumonia Control is in no sense intended to be complete and is of an entirely preliminary nature, bringing together in a summary fashion the various accomplished activities, up to approximately the middle of April, of the organizations and agencies cooperating in the Pneumonia Control Program. These activities will be discussed under five separate headings: Education, Laboratory Diagnosis, Serum, Nursing, and Research.

Education

Educational activities have been divided into two distinct fields: those directed toward the general public and those conducted within the medical profession.

Lay Education The activities for lay publicity since the start of the Program January 1, 1936, include thirteen articles published in *Health News* or as independent releases to the press throughout the State. On January 14, a radio dialogue was participated in by Governor Herbert Lehman, Commissioner of Health Thomas Parran, Jr., and Doctor Frederic Sondren, President of the Medical Society of the State of New York. This broadcast officially inaugurated the Pneumonia Control Program and was accompanied by an executive proclamation by the Governor. There have been three radio plays given by the "Health Hunters" over Station WGY and subsequently through electrical transcription, over seven other broadcasting stations in New York State. These have all stressed various aspects of pneumonia control. There have been to date 162 individual requests from

radio listeners for literature on pneumonia as a result of these plays.

The Department of Health circular on pneumonia has been completely revised and rewritten and is in the process of being printed with a colored cover design to make it more attractive to the layman.

Professional Education These activities have been carried on very largely under the immediate direction of Doctor Thomas P. Farmer as Chairman of the Committee on Public Health and Medical Education. The accomplishments in this particular field are outstanding to date amongst those of the entire Program. Thirty-two County Medical Societies have held meetings devoted wholly or in large part to consideration of the various aspects of pneumonia. Seven other counties have indicated their desire of holding such meetings at the first available date. Congratulations are certainly due Doctor Farmer and the members of his Committee for the excellent manner in which this work has been conducted.

In cooperation with this same Committee and with the Health Department's Advisory Committee on Pneumonia Control, the Director of the Pneumonia Control Bureau has written, with the close advice of Doctor Russell Cecil, a pamphlet entitled "Clinical Aspects of *Pneumococcus Pneumonia*," which is intended as a simple, concise and authoritative review of the subject for reference use and which is to be sent to all practicing physicians in upstate New York. As an appropriate supplement to this, the Division of Laboratories and Research of the State Department of Health is preparing a revision of their list of approved laboratories which will bring each physician's information up to date concerning facilities for pneumococcus typing, and other laboratory services, in his own immediate vicinity. This list will also include a statement of the stations distributing the new concentrated Type I antipneumococcus serum.

There have been a number of articles published in the *NEW YORK STATE MEDICAL JOURNAL* on the subject of pneumonia and the Pneumonia Control Program. Most of the items appearing in *Health News* have also been duplicated in this *JOURNAL* in the "Public Health News" section.

The Health Officers of sixteen counties have attended at one time or another, meetings at which the subject of pneumonia and pneumonia control have been discussed.

Laboratory Diagnosis

If early specific serum treatment of pneumonia is to be urged, a responsibility for providing adequate facilities for bacteriological diagnosis is automatically implied.

centrated The first activity of the Committee was to approach the Commissioner of the State Department of Health and explain the plans which the Committee had formulated, and request refined anti-pneumococcus serum Type I for physicians This request was readily agreed to by the officials of the State Department of Health A supplementary appropriation was approved by the Governor and a cooperative plan of interested agencies formulated for the Control of Pneumonia In addition to the State Department of Health and the State Medical Society, the other cooperating agencies are the Metropolitan Life Insurance Company, the Commonwealth Fund, and the State Association of Public Health Laboratories The Metropolitan Life Insurance Company and the Commonwealth Fund have made additional funds available to the State Department of Health for various services, while the State Association of Public Health Laboratories has been able to do much from the laboratory standpoint, because of its excellent organization throughout the State The Committee on Public Health and Medical Education feels that a larger part of the Pneumonia Control Program concerns essentially the individual physician, than is the case of most other public health programs It believes that regarding the questions of medical care and graduate instruction, it has the right to make decisions, so far as this program is concerned The purpose of this report is to cover not only the activities of this Committee of the State Society, but also to show what has been done in the entire program, carried on by the five cooperating agencies

II Report of the Chairman of the Pneumonia Sub-Committee

Shortly after the idea of a pneumonia campaign was initiated, Dr Farmer, Chairman of the Committee on Public Health and Medical Education of the State Medical Society appointed a pneumonia sub-committee, which consists of the following personnel

Dr Russell L Cecil, New York City, *Chairman*, Dr Clayton W Greene, Buffalo, Dr O W H Mitchell, Syracuse, Dr Peter Irving, New York City

One of the functions of this sub-committee was to act as a liaison body between the Committee on Public Health and Medical Education and the various organizations that were to assist either financially or professionally in the conduct of this campaign It was anticipated from the first that the success of any such movement would depend in a large measure upon the enthusiasm and

cooperation of the New York State Department of Health. We were fortunate in having a Commissioner who is so familiar with the needs, so enthusiastic about the plan and so anxious to assist in every possible way Through the mediation of Commissioner Parran, cooperation and financial support were obtained from the Metropolitan Life Insurance Company and the Commonwealth Fund, and an extra appropriation was made available by Governor Lehman With the additional funds thus obtained, it was possible for Dr Wadsworth, Director of the Division of Laboratories and Research in the State Department of Health, to increase facilities for the preparation of refined concentrated Type I serum The New York State Association of Public Health Laboratories has also signified its willingness to take part in the campaign by providing convenient facilities for pneumococcus typing

In view of the many organizations concerned in the campaign, it seemed desirable to form an "Advisory Committee," which should consist of representatives from the various cooperating organizations The functions of this Committee were to be, as the name implied, advisory It was felt, however, that through the deliberations of such a committee, the various organizations represented would not only have a hearing but would thereby keep in close touch with the various activities of the campaign The Advisory Committee consists of the following personnel

Dr Russell L Cecil, New York City, *Chairman*
Dr Donald B Armstrong, New York City
Dr Rufus Cole, New York City
Dr Thomas P Farmer, Syracuse
Dr Clayton W Greene, Buffalo
Dr Peter Irving, New York City
Dr G M MacKenzie, Cooperstown
Dr O W H Mitchell, Syracuse
Dr George Ramsay, Albany
Dr Clarence L Scamman, New York City
Dr Augustus B Wadsworth, Albany
Dr Arthur W Wright, Albany

The Advisory Committee held two meetings, and its recommendations have been of great value in carrying out the many features of the campaign

The chief functions of the Sub-Committee on Pneumonia have been

- 1 Arranging for a series of articles on various phases of the pneumonia problem to appear in the NEW YORK STATE JOURNAL OF MEDICINE.

- 2 The preparation of a short authoritative treatise on the entire subject of pneumonia including diagnosis and treatment, to be distributed free of charge to physicians throughout the State. This brochure has just been completed

- 3 Selection of a group of qualified speakers to be available for medical meetings, who would

At the outset of this Program there were seventy-eight laboratories in New York State approved for this particular function. This number has now been extended to 108 laboratories located in sixty-six centers. Thirty-seven of these laboratories serve counties and thirteen serve cities on a contract basis. In certain localities lacking or unable to support an approved laboratory, so-called "preliminary typing stations" are being set-up, where the rapid (Neufeld) method of typing may be carried out and the results later checked in an approved laboratory, the director of which exercises supervision over the "preliminary station." There are six of these stations in operation at the present time. Local welfare administrators throughout the State have been advised that pneumonia typing is a legitimate and reimbursable item and are authorized to pay a fee of \$2 for such service to indigent patients in areas where no other provision for such service exists.

Arrangements have been made for the Department of Health to receive monthly reports of the number of pneumonia specimens examined and the types found from all of the approved laboratories. The data from these reports is not at present available, save from the Bender Hygienic Laboratory in Albany. The reports from this laboratory show approximately a 135 per cent increase in the number of pneumonia specimens examined during the first three months of 1936 as compared to the average for the same three months for the past ten years. If such an increase in typing is universal, a favorable response on the part of the medical profession in general would seem to be indicated.

That the practicing physicians have not been using the facilities of these laboratories as fully as they might, may possibly be indicated by the fact that in 1934 there were only 532 Type I sputum specimens submitted throughout the entire year. This represents only about one-sixth of the probable occurrence of this type.

Attached is a spot map indicating the distribution of typing facilities in the State.

Serum

To date the Division of Laboratories and Research has been distributing only Type I antipneumococcus serum. It was thought advisable to limit the activities of the first year of the Pneumonia Control Program with respect to serum to this type inasmuch as the efficacy of Type I antipneumococcus serum is known to exceed that of any of the other types produced, and it seemed the soundest policy to attempt to extend the use of serum with a product upon which one could place complete dependence.

A satisfactory analysis of the amount of serum distributed in the past years is difficult to make, and were it made, would prove misleading because of the obvious inaccuracy of comparing statistics from 1936, with an extensive follow-up system in operation, with results from previous years, particularly 1933-34-35, when such active case following was not employed. The total amount of serum distributed annually by the Division of Laboratories and Research over a period of the past five years has varied roughly from 1,000 to 1,600—50 c.c. bottles. This serum was unconcentrated. On the basis of about four bottles per case, the amount distributed would prove sufficient for the treatment of 350 cases were it all used, which was probably not the case.

There are a number of recognizable reasons for the general failure of the practicing physician to use State serum in the past.

- 1 There has been a certain prejudice, possibly through inadequate understanding of its use, against serum.

- 2 Those physicians using serum have preferred, in many instances, the commercial products which have been for a number of years concentrated, polyvalent, and more conveniently packed.

- 3 The almost certain occurrence of severe delayed serum sickness following treatment with unconcentrated serum has militated against its use.

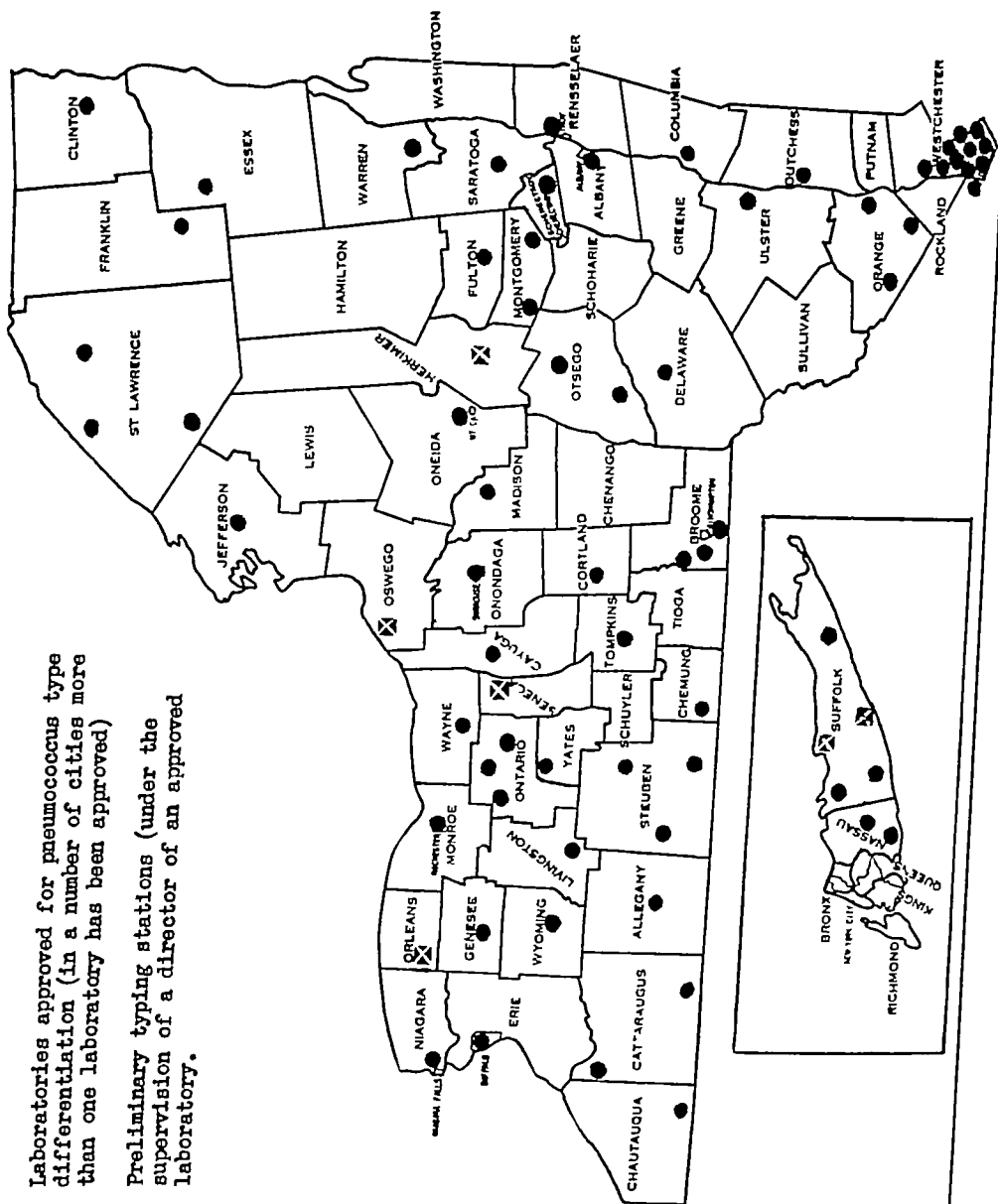
- 4 The old and laborious methods of sputum typing have resulted, oftentimes, in such delay that serum treatment when started has been late in the course of the disease and consequently of relatively little value.

The State Department of Health has, this year, commenced the distribution of a highly refined and concentrated Type I antiserum which compares favorably with the best commercial serum available. The general adoption of the Neufeld method of sputum typing, which has made it possible to obtain a report in many instances within a period of an hour, has eliminated the undesirable effect of time lost by the methods previously employed. The use of concentrated serum has resulted in a much lower incidence of delayed serum sickness which when it does occur is much milder than formerly. These three fundamental improvements in themselves should serve to a considerable extent to remove the various prejudices against the use of serum on the part of the physician which have existed in the past.

Up to the first of April 1936 the distribution of Type I serum from the Division of Laboratories and Research for the first three months of the year was 235 per cent greater than during the corresponding months of 1935 and 369 per cent greater

● - Laboratories approved for pneumococcus type differentiation (in a number of cities more than one laboratory has been approved)

✕ - Preliminary typing stations (under the supervision of a director of an approved laboratory.)



than during the corresponding months of 1934. This does not mean that such an increased amount has actually been used though in a number of areas the supply has been sufficiently used so that the distributing stations have requested more.

It has always been a difficult matter to get reports on serum-treated cases from physicians. At the present time, a very active follow-up system is being employed and it is hoped that eventually case records of practically all serum used may be obtained.

The status of Type II serum remains somewhat uncertain. The Division of Laboratories and Research has eighteen horses under Type II pneumococcus immunization at the present but the time required to obtain a satisfactory titer is much greater for this type than for Type I and the therapeutic value of such serum is less well established.

From January 1, 1936 to date reports have been received on the use of serum in 153 cases. Of these 123 have recovered and thirty have died, which gives a gross case fatality rate of about nineteen per cent. When this series is corrected by removing those treated after the fourth day of the disease, there remain 107 cases recovered and fifteen died, which gives a corrected case fatality rate of twelve per cent. In the final analysis of such a series, further corrections should be made to include those cases receiving an inadequate amount of serum as well as those improperly typed or not typed at all. There have been no reported fatalities nor serious reactions from serum. The percentage of chill reactions has been gratifyingly low, being about seven per cent, which compares very favorably with the lowest percentages in other series reported in the literature.

Attached is a spot map showing the location of the ninety-three supply stations distributing Type I serum.

Nursing

The value of adequate skilled nursing care in the treatment of pneumonia has been recognized and an effort made to stimulate insofar as possible employment of such service. In many communities, facilities are inadequate but in others where certain facilities exist, it has been found that the physicians are oftentimes unaware of their availability.

The New York State Nurses' Association has formed a committee which has considered the ways and means by which they could assist in the Pneumonia Control Program. The Association has undertaken to advise its various district societies in the

organization of programs devoted to the nursing problems and other aspects of pneumonia, to assure the inclusion in the training school curricula of adequate instruction in pneumonia, to prepare for publication a syllabus on the nursing care of pneumonia with pertinent medical information included, and has also undertaken on a large scale, in close cooperation with the Division of Public Health Nursing, an extensive program for the expansion of community nursing service.

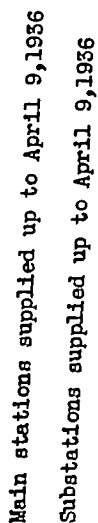
Welfare agencies have been advised that the nursing care of critically ill pneumonia patients is a legitimate responsibility in areas not otherwise provided for.

Research

An attempt is being made to obtain by a State-wide survey, reports on the nursing care rendered, and certain other data, on all known cases of pneumonia. From the middle of February till the end of March, 663 completed reports have been received. Though it is too early to attempt more than a preliminary analysis certain interesting facts may be worth comment. Fifty-five per cent of these cases were treated at home, thirty-nine per cent in hospitals, and six per cent in various State institutions. Only fifty per cent of those hospitalized and only nineteen per cent of those treated at home were reported as having had bacteriological examinations. Sixty-two per cent of those hospitalized and known to have Type I or II infection received serum while seventy-one per cent of those treated at home and known to have one of these types were so treated. Among those not hospitalized only forty per cent received *any degree* of skilled nursing care. In the entire series of 663 cases, 402 or sixty-one per cent received some form of skilled nursing care, either in the hospital, institution or home.

An extensive analysis of the current case reports and those of the previous two years is being undertaken with a view to obtaining as accurate information as possible regarding the distribution of pneumonia in relation to geographical location, population groups, age, character of the infection, and proper estimates of morbidity and mortality rates. In view of the fact that pneumonia case reporting has been probably little better than fifty per cent complete in the past, however, adequate statistical studies are difficult. There is considerable ground for educational effort within the profession which might result in better cooperation in this respect.

Of particular epidemiological interest has been the finding of an apparently significant secondary case rate among the families of



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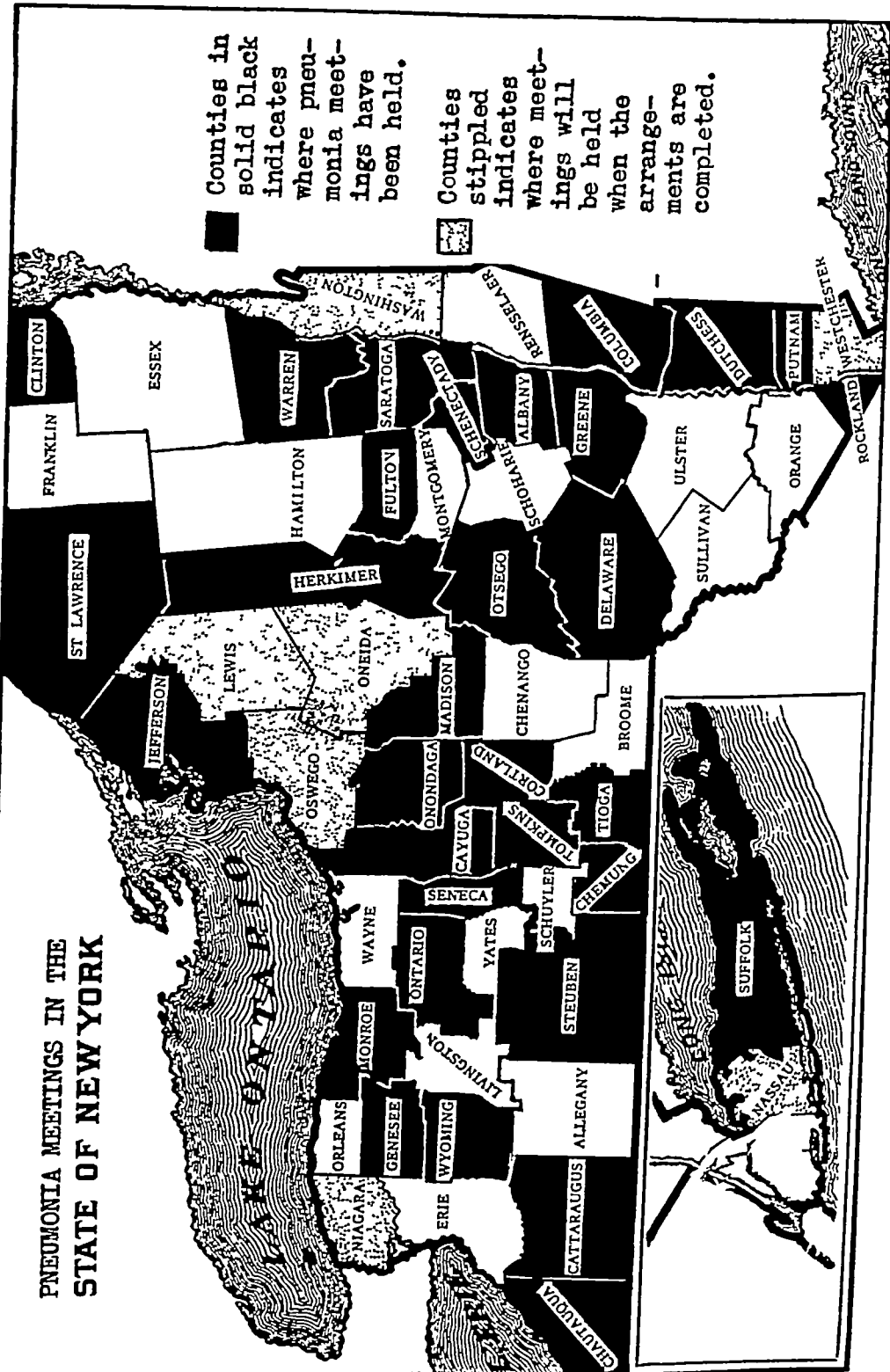
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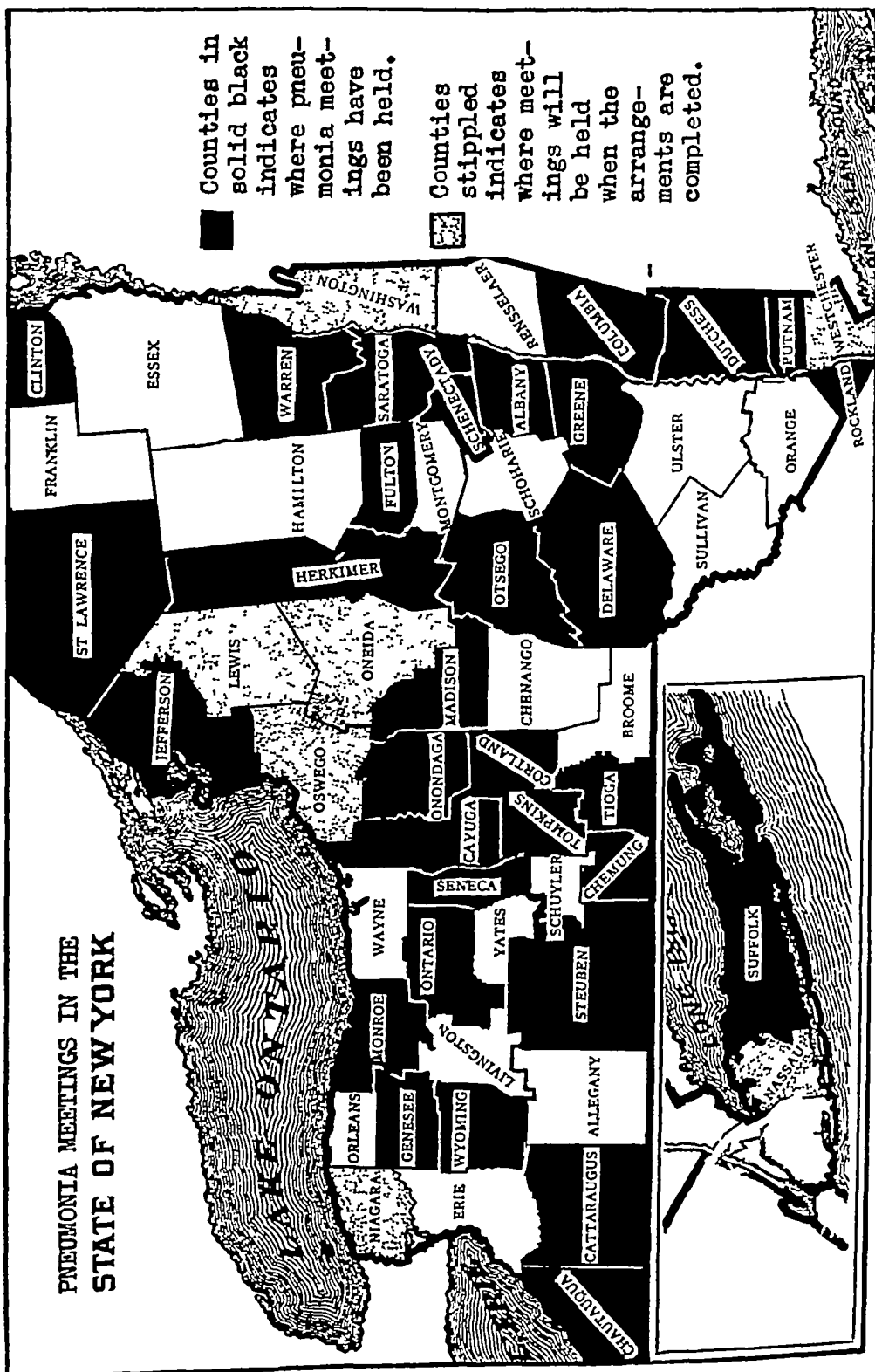
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ONONDAGA, January 7, 1936 "Pneumonia Control Program," Dr Thomas P Farmer, "Bacteriology of Pneumonia," Dr Orren D Chapman, "The Diagnosis and Treatment of Pneumonia," Dr Russell L Cecil

ONTARIO, January 14, 1936 "The Diagnosis and Treatment of Pneumonia," Dr Edward G Whipple.

OTSEGO, January 15, 1936 "Bacteriology of Pneumonia," Dr O W H Mitchell, "The Diagnosis and Treatment of Pneumonia," Dr Edward C. Reifenstein

PUTNAM, December, 1935 "The Diagnosis and Treatment of Pneumonia," Dr Russell L Cecil

ROCKLAND, Fall, 1935 "The Diagnosis and Treatment of Pneumonia," Dr Russell L Cecil

ST LAWRENCE, February 13, 1936 "Bacteriology of Pneumonia," Dr O W H Mitchell, "The Diagnosis and Treatment of Pneumonia," Dr Charles D Post.

SARATOGA, Spring, 1936 "The Diagnosis and Treatment of Pneumonia," Dr James F Rooney

SCHENECTADY, February 11, 1936 "The Diagnosis and Treatment of Pneumonia," Dr Russell L Cecil

SENECA, October 10, 1936 "The Diagnosis and Treatment of Pneumonia," Dr John J Lloyd

STEBEN, March 12, 1936 "Public Health Aspects and Measures for the Control of Pneumonia," Dr Edward S Rogers, "The Diagnosis and Treatment of Pneumonia," Dr Norman S Moore.

SUFFOLK, January 29, 1936 "The Diagnosis and Treatment of Pneumonia," Dr Jesse Bullowa

TIOGA, January 13, 1936 "The Diagnosis and Treatment of Pneumonia," Dr Nelson G Russell, "Bacteriology of Pneumonia," Dr O W H. Mitchell

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WARREN, March, 1936 "The Diagnosis and Treatment of Pneumonia," Dr Russell L. Cecil

WYOMING, October, 1935 "The Diagnosis and Treatment of Pneumonia," Dr Nelson G Russell

V Pneumonia Control Program

Part of the NEW YORK STATE JOURNAL OF MEDICINE

Early in the establishment of the cooperative "campaign" of the State Medical Society, the State Department of Health, and other organizations to reduce mortality from pneumonia in this State, the JOURNAL became alert to aid the project. It was found possible to help in two ways, *first*, publication of news of progress of this new effort

in preventive medicine could help, *second*, the attention of medical men could be directed to pneumonia and its up-to-date methods of treatment by appearance in the Scientific Section of original articles

The JOURNAL has been able to present these two phases of the Campaign together in the following chronological order

April 1, 1935—Vol 35, no 7, p 325 *News Item*—Notice from Committee on Public Health and Medical Education of launching of the Campaign

April 15, 1935—Vol 35, no 8, p 352 *News Item*—Report of Sub-Committee on Pneumonia to 1935 House of Delegates

June 15, 1935—Vol 35, no 12, p 636 *News Item*—Endorsement by House of Delegates of Sub-Committee plans for the Campaign—Minutes of 1935 House of Delegates, Section 47

August 15, 1935—Vol 35, no 16, p 831 *Editorial*—"Pneumococcus Type VIII"

October 15, 1935—Vol 35, no 20, p 1001 *Scientific Article*—by Dr Jesse G M Bullowa. "Pneumothorax in Pneumonia—An Appraisal."

October 15, 1935—Vol 35, no 20, p 1045 *News Item*—Report from Sub-Committee on Pneumonia rendered by Dr Edward G Whipple, member, to the Annual Conference of County Secretaries held in Albany on September 10, 1935. The meeting "enthusiastically endorsed" the pneumonia control program

November 15, 1935—Vol 35, no 22, p 1123 *Scientific Article*—Dr Russell L. Cecil "A Campaign to Reduce the Death Rate of Pneumonia in New York State." This was a paper read by Dr Cecil as Chairman of the Sub-Committee on Pneumonia before the New York Public Health Association meeting at Saratoga Springs on July 27, 1935. The author combined in one paper the present-day accepted dicta on treatment of pneumococcus pneumonia and also the State Society's activities in spurring both professional and public interest in the campaign.

December 15, 1935—Vol 35, no 24, p 1263 *Original Article*—Dr Arthur F Chace, New York "Treatment of Pneumonia" This was in effect, a postgraduate lecture on therapy of pneumonia which considered all details of treatment including specific sera-therapy

February 1, 1936—Vol 36, no 3, p 198. *News Item*—Proclamation by Governor Herbert H Lehman making the period, January 15 to February 15, 1936 "a season for all citizens to join in a common effort to reduce the number of pneumonia cases and deaths"

February 15, 1936—Vol 36, no 4, p 281 *News Item*—"Pneumonia Control Program" of the Committee on Public Health and Medical Education. Here was printed the text of the three-cornered radio broadcast of January 14, 1936, between Governor Lehman, Commissioner Parman, and Dr Sondern over WGY. It was following this broadcast that the Governor issued the proclamation published in the February first issue just preceding *News Item*—*Public Health News*—Reproduction of leaflet on Pneumonia issued by the State Department of

Health. This leaflet gave information as to use of serum, typing, and serum reactions

March 15, 1936—Vol 36, no 6, p 455 Establishment of a new sub-section entitled "Pneumonia Control Program" under the main heading Public Health News This item was an article by Ruth Gilbert, M.D., of the Division of Laboratories and Research of the New York State Department of Health under the title "Laboratory Service for Pneumococcus Type Differentiations"

[Note—From this time on the Pneumonia Control Program will have its own place in the JOURNAL as a part of Public Health News—Peter Irving]

April 1, 1936—Vol 36, no 7, p 530 Report to the House of Delegates of Committee on Public Health and Medical Education as to progress of Pneumonia Control

April 15, 1936—Vol 36, no 8, p 627 *Scientific Article*—Dr Theodore J Abernethy, a report from the Hospital of the Rockefeller Institute for Medical Research on "Concentrated Antipneumococcus Serum in Type I Pneumonia—Control of Dosage by Skin Tests with Type Specific Polysaccharide."

In addition to the news items and original articles enumerated above the JOURNAL has published many articles that have relation to pulmonary conditions and their treatment.

VI. Publicity by the Bureau of Public Relations

To assist the agencies cooperating in the Pneumonia Control Program, the Public Relations Bureau of the Medical Society of the State of New York has prepared and distributed, since September 30, 1935, six news releases These articles were sent to newspapers throughout the State. The release of January 13 entitled "Facts about Pneumonia," was sent to 114 editorial writers and 528 editors of weekly newspapers Such a wide distribution indicates the effort which this Bureau is making to acquaint the people of New York State about pneumonia and the methods advocated for the control of the disease

VII General Statement Regarding Present and Proposed Activities

The attempt to lessen pneumonia morbidity and mortality by prevention, early diagnosis, and improvement of medical and nursing care is a task which requires pa-

tience, clear thinking, optimism, and cooperative endeavor The progress which has been made is little compared to possible accomplishment.

Pneumonia control is a complicated problem—one of the most difficult—for the following reasons

- 1 Wide variation in susceptibility
- 2 Numerous predisposing factors
- 3 Many varieties of bacteria causing pneumonia
- 4 Lack of specific remedies for so many of the infections
- 5 Inadequate medical and nursing care
- 6 Lag of the educational and informational program

Slow progress, therefore, is no cause for despair or discouragement. Unless there are unlooked for and undreamed of discoveries, it is unlikely that pneumonia will rapidly decline

The present program includes the following basic features

- 1 Education of the public
- 2 Postgraduate medical and nursing education concerning the latest advances
- 3 Improvement of facilities for diagnosis and treatment
- 4 Research, laboratory and clinical

Reports by those participating in the New York State program are encouraging in all these fields of endeavor A good beginning has been made

The directors of the program realize that most people know little concerning pneumonia. There should be a great expansion of the educational program Brief, attractive, and informative literature, group discussions, well-prepared short talks by good speakers for clubs and various organizations are methods which should be more frequently employed The radio should be used when available and opportune

Of course, there will be no slowing up of graduate education for physicians and nurses

Sustained interest and financial support of the program will lower pneumonia morbidity and mortality

THOMAS P FARMER, M.D., *Chairman*

MISDIRECTED SPANKS

The parents, and not the baby, should be spanked when the child indulges in tantrums, crying, whining, or thumb-sucking, said Professor Christine Heimig of the Child Development Institute of Columbia University, the other day "When Johnny does

not behave properly, that is a sign that something is wrong," Professor Heimig said. "If the parents can't find the root of the trouble, they should seek some one who can give them educational guidance."

Public Health News

The Vaginitis Problem in New York City

JOHN L. RICE, M.D., *New York City*

Commissioner of Health

The problem of vaginitis in children in its various aspects, in New York City increasingly challenges the concern and attention of medical, public health and social welfare leaders. In regard to all its main aspects—diagnosis, therapy, treatment facilities, hospitalization, reporting, school exclusion and provision of schooling for those excluded, the situation is confused and unsatisfactory and calls for constructive consideration.

In the hope of dealing with the problem more effectively the Commissioner of Health called a conference of medical and welfare leaders to discuss the problem. As a basis for intelligent discussion it seemed desirable first to ascertain the size of the vaginitis problem in New York City and what the existing facilities are for the medical and hospital care of vaginitis patients. Therefore a census of cases and of treatment facilities was made, a brief report of which follows.

The purpose of the census was (a) to learn the number of cases of vaginitis under medical supervision on May 1, (b) to secure data from which the annual incidence of such cases under medical care may be computed, and (c) to ascertain the agencies which offer medical care of vaginitis cases, and the distribution of these agencies.

Inquiries were addressed to the hospitals and certain clinics, and to the child-care institutions in greater New York. The following questions were asked:

- 1 Does your institution treat gonococcal vaginitis?
- 2 How many cases of vaginitis were registered for treatment in your institution on May 1, 1936? (a) In-patients, (b) out-patients
- 3 How many cases of vaginitis were newly admitted to your institution during the month of April?

Inquiries were sent to 148 hospitals, of which 136 or all but twelve replied.

Of the 136 hospitals which furnished information, 103 stated that they do not treat vaginitis, and thirty-three stated that they do treat vaginitis.

However, of the thirty-three hospitals which claim to treat vaginitis, thirteen report having no cases during the month of April and the inference is that they rarely

do have such cases. Only twenty hospitals report cases during the month of April. These are, in the order of the number of cases, as follows:

1 Metropolitan Hospital	324
2 Bellevue Hospital	86
3 New York Hospital	65
4 New York Foundling Hospital	34
5 Kings County Hospital	23
6 Brooklyn Hospital	19
7 Hospital for Joint Diseases	15
8 Brooklyn Nursery and Infants Hospital	12
9 Lincoln Hospital	10
10 Roosevelt Hospital	6
11 Fordham Hospital	6
12 Beth-el Hospital	6
13 Long Island College Hospital	5
14 Mt. Sinai Hospital	5
15 Morrisania Hospital	5
16 New York Polyclinic Hospital	3
17 Gouverneur Hospital	3
18 Bronx Hospital	2
19 New York Infirmary for Women and Children	1
20 Central Park Hospital	1

Total cases in hospitals on May 1 631

Inquiries were sent also to sixty-six child care institutions of which fifty-six replied. Of these, forty-six stated that they do not treat vaginitis and six replied that they do. But of these six only three reported having cases under their care during April, to a total of nine cases.

The total number of cases of vaginitis in the care of all institutions on May 1st is then 640. Of these 129 were in-patients and 511 were out-patients.

The number of cases of vaginitis newly admitted during the month of April is ninety-one. Assuming this rate to hold during the twelve months of the year, gives an annual incidence of 1092 cases of vaginitis under medical supervision in hospitals, clinics, and child care institutions.

It must be observed that this probably does not represent the full incidence rate, since the institutions which claim to treat vaginitis but reported no cases for the month of April may, presumably, have some cases during other months of the year. It is probably safe to assume that 1,200 cases would represent the approximate annual incidence of vaginitis cases under medical care in institutions.

It is to be noted that of the 631 cases of vaginitis found in twenty hospitals, 532 or 84.3 per cent were carried by five of

the hospitals, namely Metropolitan, Bellevue, New York Hospital, New York Foundling Hospital, and Kings County Hospital.

It would seem that the essential problem of treatment facilities is one of a more equitable distribution of the case load.

The annual incidence of approximately 1,200 cases does not, of course, represent

the actual incidence of existing cases of vaginitis but only the incidence of cases in medical hands.

What the actual incidence of this infection is remains yet to be determined, but it seems probable that there are many neglected cases especially in the poorest and most ignorant part of the population.

Laboratory Aids in the Diagnosis of Tuberculosis

Four facts stand out prominently in the diagnostic and public health problems of tuberculosis. (1) Numerous undiagnosed cases of active pulmonary tuberculosis are constantly scattering infective sputum in every county and city of the State. (2) Signs and symptoms may be absent, apparently trivial, or clinically indistinguishable from those of a nontuberculous infection. (3) Up to the present time early diagnosis has been made in New York State in only a small percentage of the cases of pulmonary tuberculosis. (4) *X-rays of the lung fields plus early and repeated sputum examinations* will often establish the diagnosis in individuals not suspected on clinical grounds of having tuberculosis.

The demonstration of acid-fast bacilli in a stained preparation may nearly always be considered diagnostic of tuberculosis. In rare cases further tests may be required to differentiate *B. tuberculosis* from other acid-fast bacilli (such as *B. leprae* and *B. smegmatis*) occasionally found on or in the human body.

In cases of suspected extrapulmonary tuberculosis, specimens suitable for examination for *B. tuberculosis* are portions of the suspected tissue, any discharge or fluid arising therefrom, or any natural body fluid or excretion which may be contaminated by the lesion. Depending then upon the location of the suspected infection, these would include urine, feces, pus, serous discharges, cerebrospinal, pleural, ascitic, and joint fluids, and pieces of tissue obtained by puncture, curettment, or operation. In the differentiation of a nontuberculous from a tuberculous infection of the meninges, quantitative determination of the glucose in the spinal fluid is often helpful.

Unless a tubercle has broken down, the number of bacilli in the specimens will be extremely small, and may escape detection

on one or even several examinations. For this reason *negative findings should never of themselves be interpreted as excluding a diagnosis of tuberculosis*. When possible, further specimens should be submitted for examination, but even repeated negative results of laboratory tests for tuberculosis do not outweigh definite positive clinical findings.

Other laboratory aids in the diagnosis of both pulmonary and extrapulmonary tuberculosis are cultural methods, concentration procedures, the complement-fixation test, and, particularly, guinea-pig inoculation. These are helpful in demonstrating the presence of tuberculosis when tubercle bacilli are present in extremely small numbers. These methods are also available to check a questionable diagnosis based on a stained preparation. A disadvantage of the cultural and guinea-pig tests is the length of time required to complete these examinations and the extra expense involved in the latter. Ordinarily these ancillary procedures should be requested only after consultation with the laboratory director.

The demonstration of the characteristic histopathological lesion, the tubercle, in sections of tissue, may also be considered, usually, as diagnostic of tuberculosis. Indirect evidence pointing to the existence of tuberculous infection may be had from differential cell counts on cerebrospinal or other fluids. A high lymphocyte count suggests tuberculosis. On the other hand, secondary infection by inducing a polynucleosis may mask the picture.

While a positive tuberculin test may or may not be of clinical significance, the absence of reaction in certain cases can be definitely helpful in excluding tuberculosis.

—*The New York State Association of Public Health Laboratories Leaflet No 7, May, 1936*

A seven-year-old boy, George Thornton of Mottingham, Kent, Eng., has been elected a life governor of the Royal Eye Hospital,

Southwark, in recognition of his work for the hospital's rebuilding appeal. He was saved from blindness at the hospital.

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested

Broome County

THE ENDICOTT JOHNSON Medical Department was host to the annual joint meeting of the Binghamton Academy of Medicine, the Broome County Medical and the Binghamton Psychiatric Society, Monday night, June 29, at the Binghamton Country Club

The speaker was Maj Gen Charles R. Reynolds of the Medical Corps, United States Army His subject "The Responsibility of the General Practitioner in the Scheme of National Defense"

Cattaraugus County

The annual meeting of the Cattaraugus County Medical Society was held on June 2 at Ellicottville Dr Mary B Jepson, Olean, was elected president. Other officers elected were Dr Howard L Stoll, Little Valley, vice-president Dr Joseph P Garen, Olean, secretary, and five members of the Board of Censors Dr Ira W Livermore, Gowanda, Dr Theodore J Holmlund, Cattaraugus, Dr Charles A. Lawler, Salamanca, Dr Charles B Perkins, Franklinville, and Dr E C Moore, Olean

A series of lectures on maternal welfare by recognized authorities will be given during the year under the direction of Dr William M Smith, Olean

Dr John H Kornis read an instructive paper dealing with tuberculosis control

THE ANNUAL MEETING of the Cattaraugus County Tuberculosis and Public Health Association was held in Gowanda on June 8 Addresses were given by Dr John Kornis and Dr C A. Greenleaf Dr Greenleaf indicated the high standing in the county of the Gowanda public school health work, directed by Dr I W Livermore, school health officer and Miss Mohr, local Red Cross nurse

Cayuga County

There was a joint meeting of the Cayuga County Medical Society and the Geneva Academy of Medicine on June 18, at Hotel Osborne. Scientific program Presentation of Case of Cooley's Anemia—History—Dr D M Green of Auburn, Treatment—Dr Wm L Bradford of Rochester "Anemia"—Dean George H Whipple, School of Medicine, University of Rochester Discussion opened by Dr Wm A Groat of Syracuse.

Chautauqua County

THE FIFTH ANNUAL inter-state summer meeting will be held on July 22 under the auspices of the Medical Society of the County of Chautauqua

It is to be a combination of concise medical papers, excellent music, and varied sports The Chautauqua Medical Society wishing to honor its President, Dr Walter L Rathbun, has dedicated this day to him

The public address is entitled "Progress in the Control of Tuberculosis" by H E Kleineschmidt, M D, Director Health Education, National Tuberculosis Association

A medical program in the morning is to consist of a discussion of "Diabetes and the Use of a New Insulin" by Byron D Bowen of Buffalo, "The Heart" by James G Carr, M D, Associate Professor of Medicine, Northwestern School of Medicine, Chicago, "Surgery Now and Then" by William D Johnson, Past President of New York State Medical Society, Batavia The meeting is held in the outdoor camp at Chautauqua. All Doctors and their families are invited

Chenango County

THE 131ST SEMI-ANNUAL meeting of the Chenango County Medical Society was held June 9 at New Berlin Dr Leon Griggs of Syracuse was the guest speaker

Cortland County

THE CORTLAND COUNTY MEDICAL Society listened to an interesting address on June 19 by Dr W C Thomas, of Clifton Springs on "The Differential Diagnosis of the Adenopathies"

Delaware County

THE QUARTERLY MEETING of the Delaware County Medical Society was held on June 16 in Walton Dr Kress of the state institute for study of malignant diseases spoke on cancer

Dutchess County

THE REV JAINE CASTIELLO, S J Ph D, Oxford university, post graduate lecturer on psychology of Fordham university was the guest speaker at the meeting of the Dutchess County Medical society at Harlem Valley state hospital, Wingdale, on June 10, on "The Psychology of Social Readjustment"

Franklin County

THE FOLLOWING NEW OFFICERS for 1937 were chosen at the regular semi-annual meeting of the Medical Society of the County of Franklin held at Saranac Lake on June 17. President, Dr Daisy H Van Dyke, Vice-President, Dr Daniel M Brumfiel, Secretary-Treasurer, Dr G F Zimmerman, Censor for three years, Dr Wm A Gaspar, Delegate to State Meeting, Dr C E Trembley, Alternate, Dr J E. White.

The President named Drs Perkins and Jameson to serve on the County Compensation Committee. A resolution was carried to hold four meetings a year—in November, February, May and August.

Kings County

THE BAY RIDGE Medical Society added a fitting climax to its 1935-36 season with its annual dinner, held June 9 at Lundy's, Sheephead Bay.

Dr H Joachim, the president of the Kings County Medical Society, was the guest of honor. Dr R. Garlick, the retiring president of the Bay Ridge Medical Society, and Dr H Sturcke, the incoming president, made short addresses. The evening was completed with a few words from G Voss, the counsel of the society.

Monroe County

A NEW EDUCATIONAL enterprise to aid in early discovery of incipient tuberculosis and other communicable diseases, has been launched by the Rochester and County Committees of the Tuberculosis and Health Association.

Plans for the service, approved by the Public Health Committee of the Medical Society of Monroe County, include the development of Speakers' Bureau project to reach industrial employe groups, new sound educational motion pictures, exhibits illustrating the spread of disease through household contacts, and the distribution of specially prepared literature.

Montgomery County

THE SEMI-ANNUAL MEETING of the Medical Society of the County of Montgomery was held at the Antlers Country Club at Amsterdam on June 17, with Dr Floyd Burrows of Syracuse as the guest speaker. He discussed collections as they should be made by physicians, and how they are generally made. He advocated a strictly business system and the employment of a collection agency when all other methods fail, and advised the formation of a state medical society business association as a collection agency, and to establish the

ratings of individuals who seek medical aid. People who refuse to pay their doctor's bills, he said, should have medical service cut off except in cases of emergency, just as gas and light are cut off when payments are not made. At the conclusion of the address several of those present spoke briefly, all heartily endorsing Dr Burrows' ideas and relating some of their own experiences in collecting.

Nassau County

DR. JAMES F MICHAEL, of Farmingdale, celebrated his completion of fifty years of the practice of medicine in June. Dr Michael is not only a prominent physician, but is president of the First National Bank of Farmingdale, and president of the J F Michael Realty Corporation. For many years he has served as Farmingdale village health officer and is attached to the staff of the Dr Reed General Hospital in Farmingdale. He is seventy-one.

DR. ALQUIN JAY DAVIS, superintendent of Nassau County sanatorium for seventeen years and one of its founders, died of pneumonia at the sanitarium on June 18. He was forty-nine.

Coming to Nassau in 1919, he found the sanatorium at Farmingdale a small frame building in which were housed twenty-four patients. He built up the institution into prominence. It now takes care of 400 patients.

Dr Davis did post-graduate work at the Post-Graduate hospital, Manhattan, and with Rohrer in Switzerland. Outstanding as a diagnostician of tuberculosis, he studied and lectured abroad and in this country.

New York County

MOSES PREPARED DISINFECTANTS, the ancient Jews used sun-ray treatments, and the Bible speaks of germs. These are some of the facts unearthed from Scripture by Dr Charles J. Brim, of the staff of Beth Israel Hospital.

And he proves all of it with reference to chapter and verse. After two years of study Dr Brim has published a book, "Medicine in the Bible," proving that many modern medical discoveries were old stuff, even in the days of Moses.

"With the possible exception of vaccines and sera," he said to a *World-Telegram* reporter, "the ancient Jews 3,500 years ago knew almost as much about medicine as we do today."

A FEATURE STORY in the *New York Journal* tells of a wild dash of a New York doctor through fifteen miles of city traffic in 19 minutes to save the life of a ten-months-old baby, choking to death with a

pin in her throat. The baby was Pauline Peppe, the doctor was Carl G. Candiloro, of East 38 St. and the place was the Columbus Hospital on East 19 St. The date was June 21. In proof, the newspaper prints pictures of the baby, the mother, the doctor, the pin. When the doctor was summoned, we read, he called a police car. Then "Sirens screamed, frightened motorists hugged curbs, traffic lights went for naught. The police car tore on. Around corners, across Fordham road, down the Grand Concourse, over the Harlem River, into Second ave.

"And the hospital at last. Start, 9 38 p m., finish, 9 57.

"The operation was performed. The baby lived."

Ontario County

DR. A. M. MEAD, of Victor, was speaker at the annual banquet of F. F. Thompson Hospital Alumnae Association on May 26 at Canandaigua. Dr. Mead is a member of the hospital Board of Directors and attending staff and has practiced in Ontario County over fifty years.

Orange County

SPEAKING ON SOCIAL hygiene before members and guests of the Orange County Medical Society and the Newburgh Public Health and Tuberculosis Association in the Palatine on June 18, Dr. George H. Ramsey, assistant Health Commissioner of the State of New York, outlined the new state program for the control of syphilis.

The meeting in Newburgh was one of a series on public health questions and problems sponsored by the two societies, the next to be held in Tuxedo Park on Sept. 24.

Otsego County

DR. R. W. FORD of Otsego was elected president of the Otsego County Tuberculosis and Public Health association at the annual meeting recently at the Oneonta Country club.

Rensselaer County

APPROXIMATELY FORTY MEMBERS of the Rensselaer County Medical Society participated in an outing at the Troy Country Club on June 10 which took the place of the society's regular June meeting.

Swimming, golf, tennis, softball and other sports were enjoyed and a steak dinner was served. This will be the final meeting of the society until October.

Group singing was led by Dr. A. J. Hull. Dr. Michael DeLuca spoke on his trip last year to the Pan American Medical Society

when he visited Havana, Panama and Brazil.

Rockland County

DR. CHARLES SHERMAN LITTLE, superintendent for more than a quarter of a century of Letchworth Village, the State institution for mental defectives at Thiells, N. Y., died on June 6, of a heart attack at his home in Thiells. He was sixty-seven.

THE ANNUAL SPRING MEETING of the Rockland County Medical and Bar Association was held on June 17 at the Rockland Country Club with 100 members of the two organizations in attendance. Addresses were delivered by William F. Martin, a staff member of the council of the State of New York and Dr. Frederic E. Elliott of Brooklyn, chairman of economics of the State Medical Society.

Schuyler County

DR. RICHARD NUGENT WILLIAM KNOLL HORNER, dean of the Schuyler County medical fraternity, died at the Robert Packer Hospital in Sayre, Pa., on June 17. He was for many years health officer of the consolidated health district of the village of Watkins Glen and the Towns of Dix and Reading.

Westchester County

THE GOVERNORS OF THE SOCIETY of the New York Hospital announce that the name of Bloomingdale Hospital at White Plains, has been changed to New York Hospital—Westchester Division.

This change is made in order to convey a clearer understanding than has heretofore prevailed of the relation of this Hospital to the Society by which it has been conducted since it was established in 1821. This seems especially advisable because of the great progress in the psychiatric work and facilities of the Society at White Plains and the closer relations with the New York Hospital, 525 East 68 Street, New York City, by the establishment there of the Payne Whitney Psychiatric Clinic.

The Governors also announce that Dr. Clarence O. Cheney, formerly Director of the New York State Psychiatric Institute and Hospital, and formerly Professor of Psychiatry at Columbia University, is now Medical Director of the Westchester Division.

Dr. H. F. Hart, of Peekskill, completed fifty years of practice on May 13. The doctor has served on the Peekskill Board of Education, the Village Board of Trustees and two terms as a member of the State Assembly.

Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel Medical Society of the State of New York

An Interesting Fracture Case

The treatment of fractures has frequently given rise to malpractice cases, and one decided some time ago in a nearby State presents an interesting set of facts*

A nine year old boy was riding in a wagon when the horse ran away and upset the wagon in such a manner that the child's leg was crushed. He was first attended by his family physician Dr. B. who the same day, took him to a private hospital conducted by a Dr. H. who thereupon assumed charge of the case. Dr. H. found a compound, comminuted fracture of the bones of the right leg about three inches above the ankle. He noted the possibility of infection at a point of laceration where the bone protruded, where the child's stocking and particles of earth had been in contact with the wound.

Dr. H. on first examining the limb was of the opinion that amputation was indicated, but refrained from doing so without the consent of the parents who were not available at the time. He had had considerable experience with fractures of the leg and had been successful in saving limbs in equally bad condition, so he determined to do what he could in an attempt to save the boy's leg.

The same night, therefore, Dr. H. cleaned the wound thoroughly, and making an incision replaced the protruding bone, removed certain splintered fragments, wired the fractured ends, and set them in as good position as possible. After the incision was closed with sutures, he put the leg up in a plaster cast, with cotton and gauze. A window was left in the cast over the wound to provide for drainage, inspection, and treatment.

The night the leg was so treated, a Monday, and the next day, the boy did very well, but the second night he was delirious with a high temperature and a weak pulse, and on Wednesday morning a change in the condition of the foot was discovered, the foot becoming cold and white.

After treating the case on Monday evening, Dr. H. had attended the child once or twice on Tuesday, and on Tuesday evening he had gone out of town on urgent business. He did not return until 2 A.M.,

Thursday so was not in attendance when the condition of the patient changed. Before leaving Dr. H. had instructed the head nurse, a well-trained person, to cut the cast if swelling appeared. No swelling was observed by her, but when the circulation seemed to be poor in the leg, she did cut the cast, and attempted to increase circulation. A Dr. M. who was an assistant to Dr. H. was at all times available to the patient, and it was to him that the nurse reported the patient's condition on Wednesday morning. He continued with treatments in an attempt to restore circulation but by the middle of the afternoon he was convinced that amputation had to be resorted to. Dr. M. then notified the family doctor and attempted to inform the parents and get consent to amputate. Both because the father was a railroad employee, and not readily available, and because of reluctance to permit Dr. M., a younger man to act, no consent to operate was obtained until late at night, and then the consent was that Dr. B. might operate. The hospital rules forbade an operation by Dr. B. who was not connected with its staff, and it became necessary to remove the patient to another institution.

Finally the operation was performed and the leg was amputated at the hip. The boy's life was saved after a stormy course. According to Dr. M. there was no evidence of gangrene on Wednesday morning but by late afternoon gangrene had apparently extended above the knee. Dr. M. was of the opinion that if the amputation had been permitted when he first advised it, the leg could have been safely taken off below the knee. When Dr. H. returned to the city, of course, it was too late for him to be of any assistance, for the final arrangements had then been already undertaken.

An action was brought on behalf of the child against Dr. H. to recover damages based upon alleged malpractice, and the case was tried before a jury and the jury decided the issues in favor of the plaintiff and awarded substantial damages against the doctor. The Trial Court made an order setting aside the verdict, and ordering a new trial.

The plaintiff took an appeal contending that the jury's verdict should stand, but

* *Browning v. Hoffman*, 103 S. E. 484

the highest Court in the State affirmed the Court's ruling

Upon the trial the plaintiff's case had proceeded chiefly upon the theory that Dr H. had been guilty of improper treatment in the first instance, the claim being that a plaster-of-Paris cast should never have been used due to danger of swelling which could cut off circulation at the extremity and cause gangrene. The defense had elicited testimony substantiated by Dr M. that the gangrene was due to a gas bacillus infection, the true nature of which was not discernible until late on Wednesday. The defense had also submitted expert testimony to show that the use of a plaster-of-Paris cast in the reduction of a compound, comminuted fracture was in accordance with proper and approved practice and widely used throughout the profession.

The expert witnesses who testified for the plaintiff did not condemn the treatment as approved modern practice but one of them, a Dr G., who was not in active practice, expressed disapproval of the cast in the light of standards of practice in use years before.

In deciding the appeal in favor of the doctor, the Court said in its opinion:

Dr G. retired from the practice of surgery a good many years ago and said he did not know what the modern method of treatment was. On this point he said "I do not know what the ordinary practice in Mineral County is at the present time." He had previously made the same statement in slightly different words. He was permitted, however, to say that, if the bones were comminuted or the soft parts much involved or lacerated, the use of the cast would be, in his judgment, very bad surgery. This testimony went in over an objection and an exception. Both (Dr H. and Dr G.) say the use of the cast in such cases necessitates more careful attention, and that the probability of swelling creates some danger of constriction interfering with circulation. Notwithstanding the practice twenty-five years ago, there is no conflict in the evidence as to the propriety of the use of the cast in such cases in modern surgery, and in the community in which the treatment in question took place. There is no proof that anything occurred before the departure of Dr H. indicative of an unfavorable change of condition. The leg was properly treated in the first instance and, in the absence of adverse symptoms or indications, approved surgery required nothing further, except watchfulness and attendance upon the patient, for a period of two or three days. Some of the experts say they do not redress wounds for even longer periods than that * * *

Even though the method in use when Dr G. practiced may still be in vogue in some places, and, in the opinion of some surgeons, may be the best method of treatment in cases of compound fracture, the method adopted by Dr H. was widely recognized and generally approved by the medical profession. That fact justified his use of it, even though a different one might have been more efficacious, and absolves him from both the charge of lack of skill and the charge of negligence in the use of the plaster-of-Paris cast.

Needle Breaking Case

A five year old child was brought to the office of a general practitioner for the purpose of having the child inoculated against diphtheria. The child was accompanied by an adult who was instructed by the doctor to hold the child's arm. The doctor gave him specific instructions as to the manner of holding the arm to prevent the child's moving or wriggling. Just as the fluid was being injected, the man loosened his hold and the child moved the arm with the result that the needle broke. The doctor immediately advised the child's mother of what had happened and took the child to a surgeon who tried for about five minutes to locate and remove the needle but the surgeon was unsuccessful. He then took the child to the office of another physician who had available a fluoroscope and x-ray apparatus. The surgeon again made an attempt to locate the needle with the use of the fluoroscope but again was unsuccessful. The following day it appeared that the mother took the child to a hospital where the needle was removed by another surgeon.

A malpractice action was instituted on behalf of the child by a guardian *ad litem* on the theories that the defendant had been negligent in permitting the needle to break in the first place, and that he was further negligent in permitting an attempt to remove the needle without the aid of a fluoroscope or x-ray.

The case came on for trial before a Judge sitting without a jury and plaintiff's witnesses tried to establish that, if proper practice had been followed a smaller incision than was actually made would have been adequate to readily remove the needle. The plaintiff failed to submit satisfactory proof in support of the said theories and failed to establish that the defendant was in any way negligent in the case. At the conclusion of the plaintiff's testimony, the court dismissed the action.

A writer on an upstate paper reporting a lecture by a medical man, starts off his story by the startling statement

that "many diseases formerly considered incurable are now treated successfully by allergy."

Across the Desk

Is the Serpent Repenting?

IF THE FAMOUS SERPENT of Eden was to blame for the fall of Adam and Eve and all the resultant evils to which human flesh is heir, his descendants seem to be trying to make up for it by doing their bit to alleviate our suffering. It is only natural, perhaps, for if even a worm will turn, as we are credibly informed, why not a serpent? For forty years the serpent has been contributing antivenom to cure the bites of misguided and evil-minded members of his tribe, and within the last three years he has given his venom as a new and better analgesic to still the pain of cancer or other malignant tumors. In other words, he seems to be trying his level best to justify his place on the physician's caduceus, which has previously been a bit dubious. If he continues his good work, he may deserve the laudation said to have been found on the Arizona cowboy's tombstone: "He done his damndest, angels could do no more."

The Snake is Trying to Make Good

Of course the medical men of antiquity used the serpent in their business, and his place on the caduceus was considered highly appropriate. The Egyptians over 3500 years

ago held that snake fat rubbed on the scalp prevented gray hair and baldness. It might be added that snake-bite will not only prevent gray hair and baldness, but will head off old age and all its ills. It cures everything at the same time. The Emperor Nero, who cured a great many people of all their troubles by the simple application of fire and sword, had a "theriaca," or universal remedy or cure-all, which contained dried vipers among its sixty-two ingredients. If the other sixty-one were anything similar, it seems more than likely that many who took it were promptly and permanently cured of all the troubles of this world.

It is curious how some of these old medical superstitions survive, and a recent writer in a chemical journal tells us that even today, in remote sections of France, the heads of poisonous snakes are carried in little silk bags around the necks of children as a protection against croup and convulsions.

If there is virtue in snake-venom, how can we say that anything is bad? Perhaps we have merely failed to discover the good in it.

The Baby as "Big Business"

EVERY TIME THE DOCTOR HELPS to bring a baby into the world, he is helping the growth of a big, profitable industry—the business of supplying Little Precious with a hundred things needed (or thought to be needed) for its health and comfort. Rifle over the advertising pages of the women's magazines and you will find them besprinkled with bandages, cottons, tapes, antiseptics, baby foods, cod-liver oils, cold remedies, thermometers, tooth brushes and pastes, milk of magnesia, rubber nipples, nursing bottles, hot water bottles, baby creams, talc, laxatives, croup kettles, soaps, rubber pants, nipple shields, electric pads, and dozens more, all for the helpless mite who doesn't realize his financial importance.

It is clear that there are "millions in it" for the manufacturers who cater to His Majesty, the Baby. Millions is right, for more than 2,000,000 babies were born in our

fair land last year, and the able and alert manufacturers are right on the job, thinking up new things they absolutely must have. A recent issue of a druggists' trade paper devoted most of its space to urging the retailer to fix up special "baby departments" and show-window and counter displays to induce mothers to buy the hundred things made for baby's scalp, eyes, nose, mouth, tummy, toes, and everything between those points.

The Doctor Helps, too

Smiling baby pictures are used to allure the mother. "A smiling baby face will stop any woman," the editor declares, and who will deny it? The druggists are convinced. "I am sold on baby merchandising," says one, and another avers, "We are determined to go after this business." So the

baby becomes Big Business, like everything else. We are Big Business when we coo and crow in our cradles, when we grow up and step on the gas in 25,000 000 cars, and when we ride in glittering caskets to our final rest.

All along the road the physician is

expected to render his aid, to keep young and old going as long as he can, and able to pay their way. And when the Big Business Man has made his pile, he sometimes endows a Foundation to advocate putting the doctor on a pittance under socialized medicine!

Selecting a Doctor a Live Problem

A PRACTICAL QUESTION was recently brought before the State Medical Society of Pennsylvania by a Philadelphia physician. When a family moves into a new town, how are they to select a doctor? This is a real problem, where a mistake may be serious. They usually do one of three things, said the Philadelphia practitioner, Dr Edward L. Bortz.

1 They may appeal to a hospital to recommend someone, which "obviously automatically rules out many who do not happen to be on hospital staffs."

2 In emergency cases they often leave calls with telephone operators, who "certainly are not trained to select the physician."

3 The usual practice is to ask friends or neighbors, whose recommendations "may or may not be suitable."

Here, then, is a definite need. How can it be met? Dr Bortz suggests a directory which would "list all duly registered members of the medical profession by location, type of practice, whether general or special, hospital affiliations, any foreign languages spoken, and other pertinent facts." It should properly be under the strict supervision of the county medical society and should be in every household. It would keep the profession helpfully in the minds of families in case of need, without advertising any physician at the expense of his fellows. It is a suggestion that would demand careful study from every angle, but the need is there, and a proper and sagacious handling of it might keep families from turning to irregular practitioners, noxious patent nostrums or worthless home devices.

Books

Books for review should be sent directly to the Book Review Department at 1313 Bedford Avenue Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

RECEIVED

A Synopsis of Physiology By A. Rendle Short, M.D. and C. I. Ham, M.B. Second edition edited by C. L. G. Pratt, M.D. Duodecimo of 312 pages, illustrated. Baltimore, William Wood & Company 1936 Cloth, \$3.50.

An Index of Differential Diagnosis of Main Symptoms by Various Writers Edited by Herbert French, M.D. Fifth edition. Quarto of 1145 pages, illustrated. Baltimore, William Wood & Company 1936 Cloth, \$16.00.

A Textbook of Surgery by American Authors Edited by Frederick Christopher, M.D. Octavo of 1608 pages, illustrated. Philadelphia, W. B. Saunders Company 1936 Cloth \$10.00.

Medical Papers Dedicated to Henry Ashbury, Christian Physician and Teacher Octavo of 1000 pages, illustrated. Baltimore, Waverly Press, Inc. 1936 Cloth \$10.00.

The Patient and the Weather By William F. Petersen, M.D. Volume 1, part 1. Quarto of 127 pages, illustrated. Ann Arbor, Edwards Brothers, Inc. 1935 Cloth, \$3.75.

Cardiac Output and Arterial Hypertension By Sidney A. Gladstone, M.D. Octavo of 56 pages, illustrated. New York, Sidney A. Gladstone, 1935 Cloth, \$1.00.

Pediatric Nursing By John Zahorsky, M.D. Assisted by Beryl E. Hamilton R.N. Octavo of 568 pages, illustrated. St. Louis, The C. V. Mosby Company 1936 Cloth, \$3.00.

Basal Metabolism in Health and Disease By Eugene R. DuBois, M.D. Third edition. Octavo of 494 pages, illustrated. Philadelphia, Lea & Febiger 1936 Cloth, \$5.00.

Atlas of Human Anatomy By Jesse F. Williams, M.D. Octavo of 64 pages, illustrated. New York, Barnes & Noble, Inc. 1935 Cloth, \$2.00.

Recent Advances in Dermatology By W. Noel Goldsmith, M.D. Octavo of 522 pages, illustrated. Philadelphia, P. Blakiston's Son & Co., Inc. 1936 Cloth, \$5.00.

Detachment of the Retina. Operative Technique in Treatment By J. Cole Marshall, M.D. Octavo of 80 pages, illustrated. New York, Oxford University Press 1936 Cloth, \$2.75.

REVIEWS

A Marriage Manual. A practical guide-book to sex and marriage. By Hannah M Stone, M D and Abraham Stone, M D Octavo of 334 pages, illustrated New York, Simon & Schuster 1935 Cloth, \$2 50

Questions and answers about sex for the inquisitive and the modern minded

This book is written in the form of question and answer from a young couple about to be married and a physician. There can be no doubt that Drs Hannah and Abraham Stone have had a large experience in the solution of marital problems in their work at the Marriage Consultation Centers which they have established.

This marriage manual is marvelously comprehensive, simple and direct in style, discussing fitness for marriage, the biology of reproduction, the art of marriage and sexual compatability and disharmony. Their advice on the prevention of conception is practical and reliable. Birth control is, they say "still a controversial topic" which provokes a wide and sincere divergence of opinion," so the question is considered from a medical point of view primarily.

CHARLES A GORDON

1000 Questions and Answers on T B Edited by Fred H Heise, M D Duodecimo of 232 pages New York, Journal of the Outdoor Life 1935 Cloth, \$75

The Journal of the Outdoor Life has a Question Box department to which a tuberculous person may turn with any problem concerning his health and receive therefrom correct answers. This column has never been the least valuable nor the least interesting part of that Journal. For the past twenty years these answers have been given by Dr Fred H Heise, Medical Director of Trudeau Sanatorium. From the many questions and answers 1000 have been selected, arranged in order under respective headings and presented to the public in this small volume. They cover, in a way to suit the lay mind, practically all the subjects connected with pulmonary tuberculosis, from the explanation of symptoms, of infection and immunity, the influence of heredity, the importance of the long established measures of care to the present methods of lung collapse with their general treatment, medications and possible result. It seems as if the answer to every question the patient might ask, his doctor is here given. The reputation of the Author-Editor is sufficient guarantee of the quality, the definiteness and the appropriateness of the answers. To the tuberculous patient the book should prove almost a liberal education, giving him facts of value, supporting his

morale and helping to remove those worries and doubts that retard recovery. The patient's physician should by this work gain help in his necessary educational duties, the lightening of his burdens and more cooperation on the part of those under his care.

THOMAS A MCGOLDRICK

I and Me a Study of the Self By E Graham Howe. Duodecimo of 256 pages, illustrated London, Faber & Faber, Ltd 1935 Cloth, 7/6

The author is Associate Physician, Institute of Medical Psychology, and late Chief Assistant, Psychological Department of St. Thomas' Hospital. In the book, he approaches the problem of the self in a metaphysical manner. He maintains that the unity of the self rests upon a fundamental dualism, a sort of bipolarity, the nature of which he attempts to convey by means of metaphor and diagram. The motif of his theme may well be the expression, "I see" says the blind man. After reading the book one is left with the feeling of having travelled through some strange and mysterious land and has experienced some unusual events but which he would not wish to repeat.

IRVING J SANDS

International Clinics A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, etc. Volume 3, 45th Series 1935 Edited by Louis Hamman, M D Octavo of 337 pages, illustrated Philadelphia, J B Lippincott Company 1935 Cloth, \$3 00

The first article describes Idiopathic Hypochromic Anemia, recognized mainly during the past six years. In treating it, the amount of iron in the ordinary injection is found to be too small to have any perceptible effect upon the disease. This should be well understood by now but many of these small injections are still given, especially those in fancy wrappings from Europe. In this disease liver is only an adjuvant to iron, and copper has not been shown by any conclusive evidence to be really useful.

Louis Leiter discusses renal function. He finds Van Slyke's urea clearance test the most useful. Among articles following are those on Chronic Benzol Poisoning, Observations on the Relation between Digestive Disturbances and Diseases of the Skin and the Relationship of Allergy to Migraine.

In the article on Arthritis by Boots there are some excellent illustrations of the different types of the disease. With typical examples, the differential diagnosis is found

to be simple, the greatest difficulty being encountered when osteoarthritis (Hypertrophic) is superimposed later in life upon an already existing rheumatoid (atrophic) arthritis. Over 80% of the latter type are stated to begin before 40 years of age. Hemolytic streptococcus agglutination tests and sedimentation rate are considered the most important laboratory tests in differentiation. An excellent resumé of treatment is presented. In rheumatoid arthritis no dietary restrictions are advised except an abundance of good food with sufficient vitamins. Removal of foci of infection in the tonsils and sinuses has helped more than the attack on other foci.

There are other very helpful discussions in this excellent number.

W E McCOLLOM

Das Extremitäten-, Thorax und Partial-Elektrokardiogramm des Menschen. Eine Vergleichende Studie. By Dr Franz Maximilian Groedel 2 v, text and atlas. Octavo of 358 pages, illustrated and 200 plates. Dresden, Leipzig, Theodor Steinkopff, 1934. Cloth, geb. RM, \$25.00.

This work is excellently done, the illustrations in Part Two are very beautiful, the printing is distinct and easy to read.

Dr Groedel tells very briefly of the basic theory of the electrocardiogram as taken by the three conventional leads, then describes the theory and limitations of the practical application of the electrocardiograms taken through direct chest leads. The major portion of this book, however, is a description of the theory, method, and the results of a new type of electrocardiography which he calls the "Partial-Elektrokardiographie." His observations on this latter type of electrocardiography is based on twenty-five years of hard work, and in his monograph he gives the results of the use of this method upon a large clinical material. Dr Groedel believes he can separate by this method of uni-polar application of leads the activity of the right ventricle from the left ventricle, and also describes normal and abnormal curves representing such activity.

The author realizes the lack of post-mortem, as well as experimental corroboration, but believes that in this monograph he has presented sufficient data to stimulate further clinical, experimental and pathological studies.

This monograph at present will not, in the opinion of the reviewer, have a great appeal to the general practitioner. The theories and ideas advanced are highly controversial and might be of interest to those of us who are interested particularly in normal and abnormal cardiac physiology.

CHARLES SHOOKHOFF

The Medical Formulary and Prescription Manual. By Morris Dauer, Ph G. First edition. 16mo of 297 pages. New York, J J Little & Ives Company, 1935. Cloth.

This small formulary and prescription manual will serve the busy practitioner of medicine in the lost art of prescription writing. The book is concise. It adequately covers the entire field of common drug prescriptions in some fourteen departments of medical practice. It should prove a valuable aid to the doctor who would be conscientious in regard to the quality of his prescription-writing.

GEORGE E ANDERSON

An Introduction to Public Health. By Harry S. Mustard, M.D. Octavo of 250 pages. New York, The Macmillan Company, 1935. Cloth, \$2.50.

The author has designed this volume mainly to orient the student in the field of public health. He does not include details of public health administration, the aim being rather to provide the background of information pertinent to the subject.

The author has collected the factual material from a number of works and he presents it in a correlated form in relation to the analysis of the problems and the interpretation of public health programs and practices.

This novel method of presentation is most interesting and stimulating. One certainly should agree with the author's idea that such a presentation would tend to develop a philosophy and perspective in public health study. By emphasizing the basic facts with the indication of their relationship to the problems of clinical medicine, this unique book on public health should prove of interest not only to the students of public health and medicine, but to the general practitioner as well.

The practicing physician will find much information concerning his economic status in the first chapter which is devoted to the "Backgrounds and Association of Public Health Work." The author has included a consideration of that so often neglected aspect of the public health problem, the doctor and the services he renders. This involves an analysis in dollars and cents of medical service, its market, the supply, demand, distribution, production costs and selling costs. This is followed by a brief presentation of the subject of State Medicine and there are given many figures on the cost of medical and nursing care.

The book is attractively bound, and the printing is neat and well done.

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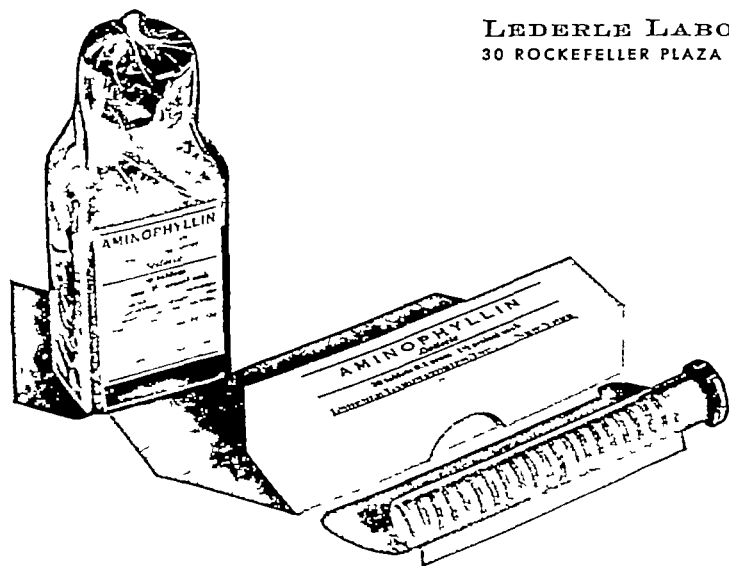
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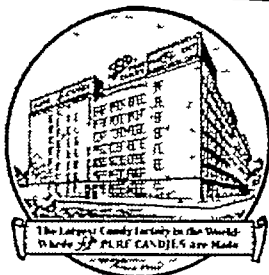
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Travel and Resorts

Conditions Ideal for Fishing

No bass season in Quebec has opened more auspiciously in recent years than the present one, according to A O Seymour, General Tourist Agent of the Canadian Pacific Railway. There is exactly the right stage of water, and the cool nights have kept the fish from going to the very deep water, where they are sometimes hard to catch. This is ideal bass bug and bait-casting weather. Bass are rising steadily to cork-bodied flies and also to standard flies attached to spinners. Some fishermen reported excellent catches with fly rods using a No 1 spinner and pork-rind.

The past week saw more successful fly fishermen at McGregor Lakes than at any time in the past. The bass responded eagerly to flies, also bass bugs, decorated with feathers and hair. Reports from Wakefield, Cayamant and Ferguson Lakes indicate that several fish weighing around four pounds were taken recently in this manner by visitors from Cleveland, Ohio.

Plug fishing conditions are now excellent. Brome Lake, Quebec, and many of the rivers thereabouts are producing plenty of fish. In this region also chain pickerel, an esteemed



sport and table fish, are found. Big great northern pike have been giving plug-casters royal battles. George Emory, of Cincinnati, Ohio, while casting for bass and pike in Grand Lake, caught a 10-pound trout. This is unusual at this time of the year except in Lake Superior, as there well-known fishes have already gone to deep water.

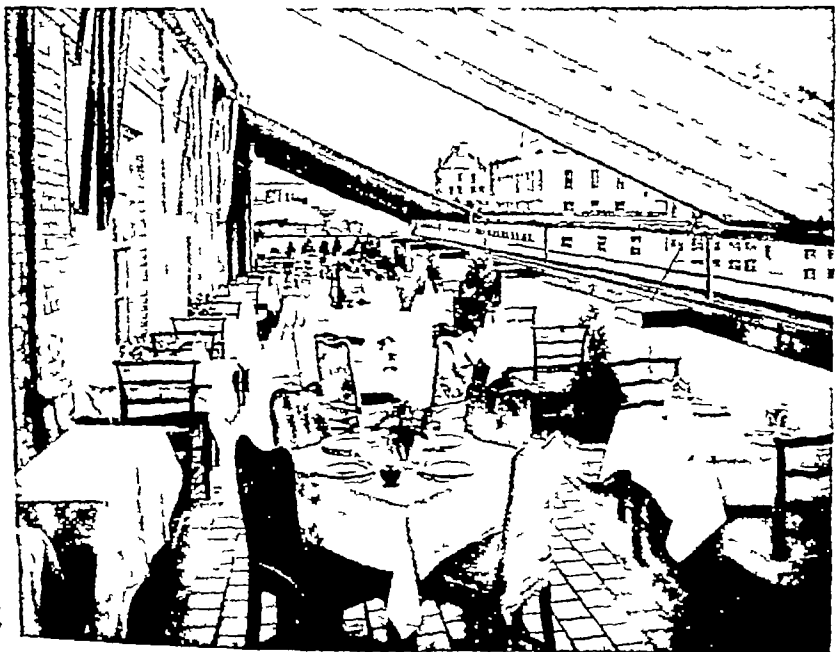
Laurentian trout fishermen have not been idle since the bass season opened. Excellent catches of both eastern speckled brook trout and red trout were made near Ferme Neuve. Most fish were caught with live bait, fishing deep and trolling. A few large lake trout were taken in Lac Largent and Lake Piscatosin.

Red-fleshed lake trout running well over 40 lbs have been discovered in a lake not far from St. Michel des Saints, P Q, according to added reports reaching the general tourist agent. The lake in question, which is unknown to tourists, according to Rowland Ford, who first saw the large trout, is about 30 minutes distant by airplane from St. Michel or three days by canoe, without any long portages.

Trout of this size are not common in Quebec. Mr Ford stated that the only others of this

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size he had heard of were taken over 100 miles north of Lake St. John a distance beyond the range of most anglers. He also said he believed that some of the large waters up near the Kempt Lakes will produce more trout of a heavier average weight than Ontario's famous Lake of the Woods.

* * *

Know Your New York

At twenty-first Street and Lexington Avenue in New York City where the well-known thoroughfare terminates is Gramercy Park, one of the few remaining private parks in the United States. The park is entirely surrounded by a high iron fence and the heavy gates are always locked, keys being available only to residents of the park as provided for in the original deeds which accompanies the development of the property by Samuel B. Ruggles in 1831.

Overlooking the park from the north is Hotel Gramercy Park, famed throughout the world for its superb location which provides quiet and charm impossible to equal in all New York, where the noise and bustle of the heavy traffic is one of the most serious of civic problems. This modern hotel constructed in 1926 on the site of Robert Ingersoll's historic home offers visitors unexcelled accommodations and cuisine tempered by the kind of service one would expect in such an exclusive and traditional hostelry. Rates are most reasonable, as low as \$2.50 per day for inside single rooms. Of course suites facing the park are available at reasonable prices also.

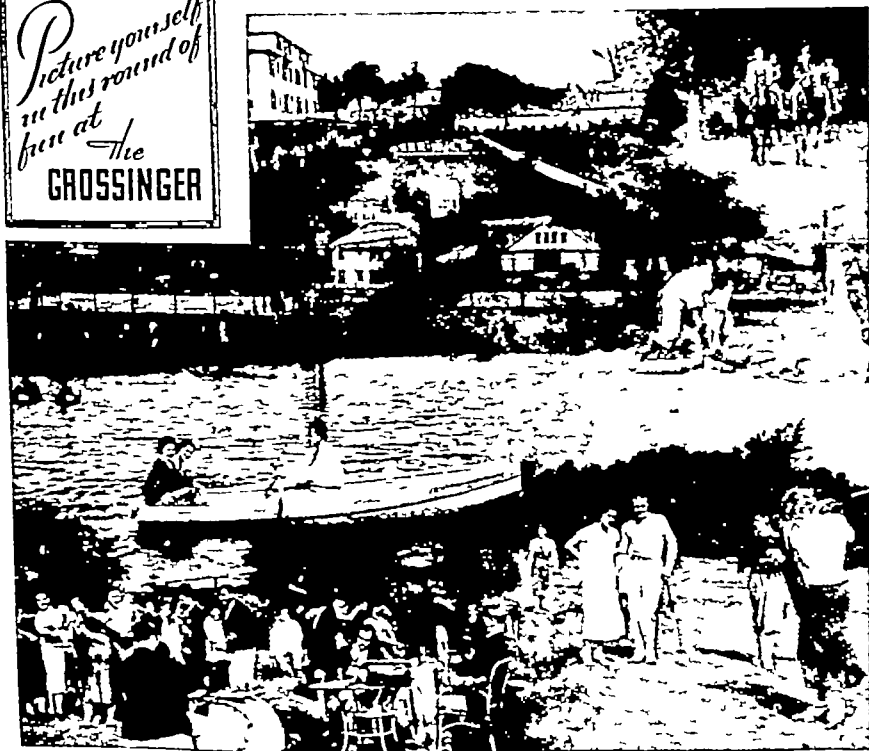
One of the most attractive of the features of this hotel is the roof which offers an unusual view in all directions. In the summer season the Skyline Cafe which opened on May 23rd, is one of the most delightful dining places in the city. Luncheon is also served on this colorful and inviting roof terrace which adjoins the cocktail bar and lounge. Supper is served until 1 A. M. The cocktail room is touched off by walls of jungle paper in the predominating color scheme of green and white. Waiters in their smart green coats and gray trousers add a distinguishing touch to the natural outdoor scene. The most desirable feature of the Skyline Cafe however is the combination of country quiet and charm with the city advantages of cuisine, service and atmosphere.

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(Continued on page xxvi)

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(Continued from page xxiv)

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People of Great Britain Using More Canned Fruits

The use of canned fruits is on the increase in Great Britain, 1935 registering an increase of 7 per cent in imports over the previous year The total value of imports for 1935 was approximately \$30,285,000 At the top of the list are canned peaches, with pears a close second, followed by pineapples, grapefruit, fruit salad, apricots, apples, loganberries, cherries Empire fruits show a 94 per cent increase over the average for the 1926-30 period Imports from Canada were six times those for 1930, with pears in the lead and accounting for 41 per cent of the total, according to the Industrial Department of the Canadian National Railways Canned apples rank next, followed by plums, pectin, loganberries One of the interesting developments of the year was the substantial exports from Canada of canned strawberries, due to short crops in Britain and Holland, other small fruits and rhubarb The United States occupies the leading position in the case of canned apples, although Canada, which shares the trade with the United States, showed an increase of 20 per cent, 1935 as compared with 1934 The United States and Australia are the chief sources of supply for canned apricots, with the former occupying first place, Australia's exports increased 175 per cent. The same holds for canned peaches, except that Australia shows a slight decrease Canada shows an increase of 768 per cent in exports of soda fountain fruit.

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Eliminating the "Nerve-wracking"

Somebody has compiled statistics of "disturbances" in the countries of the world during the last ten years They are not for general publication so the world will not, for the present at least, enjoy the surprise of the strange results Those countries that are hoary with sensation as the newspapers carry it over their columns are, it appears from the analysis, quiet places by comparison with a number of others that have no international news value in the press

Ireland, in this analysis, is a long way behind in the race for the "troubles" prize.

(Continued on page xxix)

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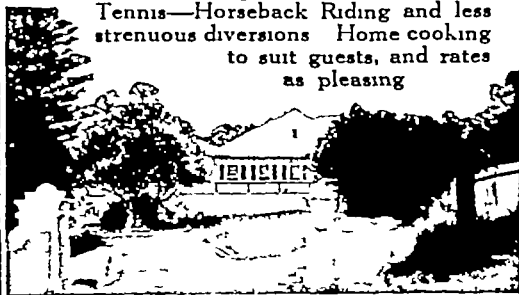
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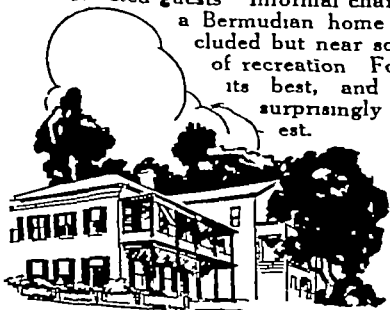
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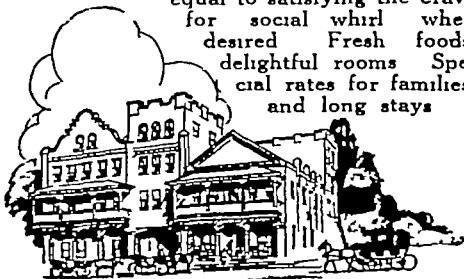
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(Continued on page xxix)

(Continued from page xxvi)

Beside many regions which the tourist frequents it is, judged statistically, a paradise of pleasant calm. Comparisons by name are undesirable further, so we may leave the details to their cruel compilers and consider the general application. It seems to be true that a would-be-visitor who asks if there is any risk in his journey is, really, anxious to have a little flutter of excitement. The Elizabethan traveler had more than a dash of that curiosity. He took his travel-pleasures realistically and capitalized the perils, alleged or genuine. It must be the same with the new traveller who goes to Ireland now in ever-increasing numbers. This year the "Ail aboard for Ireland" cry should become a joyous chorus at the western ports. It will certainly be louder than before, to judge by the portents, and in spite of the scares.

Ireland had a sort of miracle-year for visitors in 1932 in association with the Eucharistic celebrations in the country. But in 1935 there were several thousand more visitors than even in that year. One can publish these statistics cheerfully and ask, with confidence, for the verdict. It must be "Ireland for its own variety of peace and pleasure."

* * *

Physician Is First

Sir Frederick Banting, of Toronto, distinguished research physician and responsible for adding "Banting" to the language, was the first guest to sign the register at the opening of the Jasper Park Lodge, in Jasper National Park, Alberta, Canada, where Sir Frederick stopped off to enjoy a holiday before proceeding to the serious business of the Canadian Medical Association convention at Vancouver.

* * *

Atlantic City Having Good Season

With record crowds arriving for the summer period, this resort is taxing its facilities to the fullest extent to provide for their entertainment and comfort.

Practically all of the hotels are filled to capacity and the greater number of summer cottages were rented several weeks ago. Garages and parking lots too are faced with housing the thousands of automobiles which brought a great portion of the visitors to the shore.

The entire police department is working double shifts to handle the tremendous traffic problems and the famous Atlantic City Beach Patrol of 80 men is on duty to protect the thousands who are spending the greater part of their vacation on the beach or in the surf.

(Continued on page xxx)

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Where "right" describes your
selection of a hotel the conven-
iences the atmosphere the rates

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riding, tennis entertainment through the season, capped by gala dances in the Marine Grill over the water Safe beach and playground for children. Cool nights, cozy rooms, delicious food

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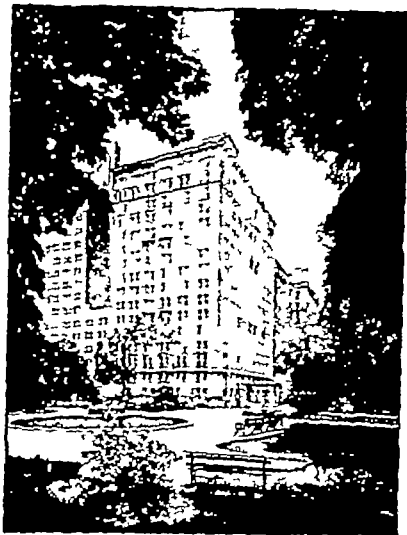
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52 Gramercy Park North

(East 21st St.)

Tel: Gramercy 5-4320

(Continued from page xxxix)

Hotel grilles, night clubs, motion picture theatres, ocean piers and other amusement places are staging special programs and leading stars of the stage, screen and radio are listed on many

Preparations are going ahead speedily for the Showmen's Variety Jubilee, which will be held here September 8 to 12. It is expected that the beauty and talent contest to select Miss America 1936 will be even more elaborate than those in the past. Girls are being chosen in elimination contests in practically every state in the country.

The Atlantic City Camera Contest is getting under way with \$1,000 in prizes. There will be four classes which include beach scenes, Boardwalk scenes, Landscapes or seascapes, and architecture. Only photographs taken here between May 30 and September 7 will be eligible for awards in the four classes. Ten prizes will be awarded in each class, and headquarters have been established for the contest on Central Pier, Tennessee avenue and Boardwalk.

* * *

Monumental Sport

WITH THE OLYMPICS just around the corner it is hardly necessary to state that Germany takes its sports seriously.

Dr Hans Wolff, author of "Sports Monuments" in the publication *Germany*, however impresses the reader with an interesting discussion of sculpture in Berlin which commemorates the physical prowess of the human race over thousands of years.

"Physical exercise," writes Dr Wolff, "has been cultivated with enthusiasm and treated with respect in Berlin since the beginning of the 19th century. Here Jahn, the father of gymnastics founded the gymnastic ground in 1811. After gymnastics came sports, but they were at feud for decades until, in very recent times, they joined hands with the common object of the physical fitness of the young."

"It is obvious that artists, especially sculptors, could not overlook this visible development. One of the first on the scene was the young Berlin sculptor Max Kruse who produced the world-famous statue of the 'Marathon Runner'."

Other famous works described by the doctor include Louis Tuaillon's "Amazon" the "Herald of Victory from Marathon," the "Shot Putter" by August Kraus, the "Javelin Thrower" by Karl Möbius, the "Four Run-

(Continued on page xxxix)



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CAPE MAY, N. J.

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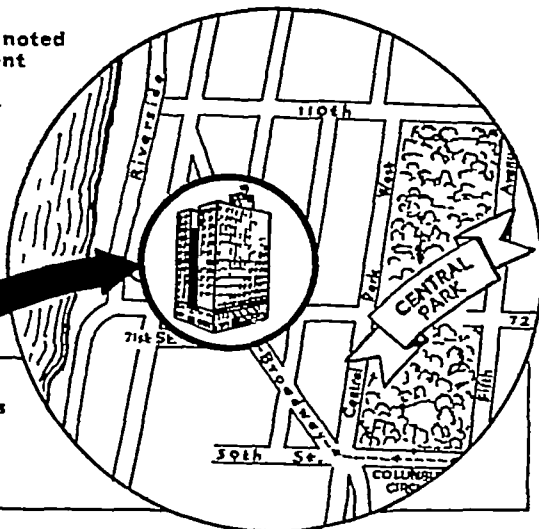
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Overlooking the Hudson River and Riverside Drive

Convenient location for doctors A hotel noted for its friendly and refined environment

A quiet place in a busy metropolis Ideally located between Broadway and Riverside Drive Convenient to express subway station, Fifth Avenue buses, and crosstown buses

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JOHN M. COBDEN, Manager

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AND ROCKEFELLER CENTER**

(Continued from page xxx)

ners" and "Diana" by Hugo Lederer, as well as mention of the fact that almost every known form of athletics and games is pictured or modelled as merited recognition by the German people.

* * *

Travel Brevities

SAILING for various destinations, recent passenger lists included the following doctors Aboard Grace Liners, Dr and Mrs Nathan Allyn of Massachusetts, Dr H Newton Gilbert of Maryland, and Dr John B Wood of Illinois. On the Cunard White Star liner *Aquilana*, Dr H J Strauss, Dr Bela Gaspar, Dr Max Jordan, Dr Harris P Mosher, Dr Mauricio Hockschild, Dr Bruno Ritter, Dr C G Crisler, and Dr Fannie F Andrews. On Furness Bermuda ships, Dr and Mrs James Devline and Dr and Mrs Wm. F Santry of Massachusetts, Dr and Mrs George J K. Hobbs of Missouri, Dr and Mrs Wm. Gray of Rhode Island, Dr and Mrs P V Carelli of Illinois, and Dr and Mrs Warren P Cordes of Massachusetts.

AMONG THOSE PRESENT at the Ambassador in Atlantic City recently were—Dr Joseph A. Themper of Washington, D C, Dr J W Mancari and Dr and Mrs E Vivas Salas of New Jersey, and Dr and Mrs L A. Meraux of Louisiana.

STOPPING at the Grossinger Hotel and Country Club are Drs Kroll, B S Levine, Herman Grossman, and Bernard Baker, all of Brooklyn and vicinity.

AT THE SEASIDE HOTEL in Atlantic City the following were recently registered—Dr and Mrs A L Baker, Dr Carlyle Morris, and Dr D Weistrod of New Jersey, Dr and Mrs H B O'Neill of New York, Dr E. McNicholas of Pennsylvania, and from Maryland, Dr Carl Meyers, Dr Rittilica, Dr and Mrs Herman J Dorf, Dr Ruzicka, and Dr and Mrs Donald Shipley.

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It's ALL whiskey 3 choice whiskies
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We sent our experts to
Canada to select this full-
bodied, full-flavored,
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Imported in barrels and
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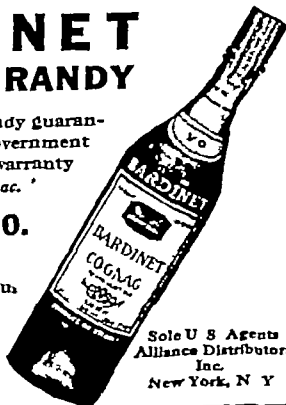
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under the shipper's warranty
—"Aquit Regional Cognac."

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15 years old
84 PROOF
and for the connoisseurs

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1865
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8 YEARS OLD • 90 PROOF

Straight Rye Whiskey

Distilled in Canada

BARDINET COGNAC BRANDY

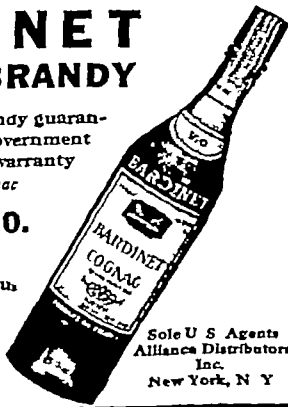
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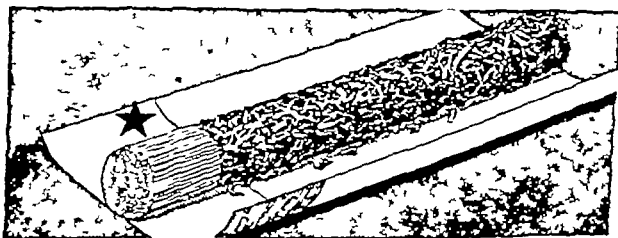


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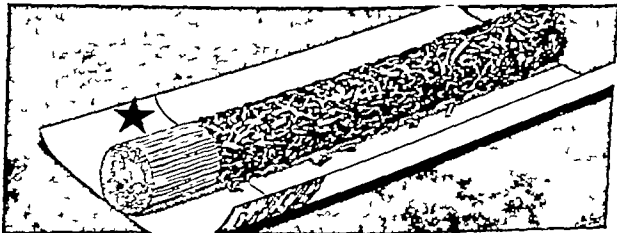


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In diarrhea Carbohydrates in the form of dextrin maltose, well cooked cereals or rice usually can be handled without trouble. —B B Jones. A discussion of some of the common infantile diarrhea and the diets used in the management of the same. Arch. Pediat. 33 501-512 July 1916.

SERIOUSNESS OF DIARRRHEA

There is a widespread opinion that, thanks to improved sanitation, infantile diarrhea is no longer of serious aspect. But Holt and McIntosh declare that diarrhea "is still a problem of the foremost importance, producing a number of deaths each year." Because dehydration is so often an insidious development even in mild cases, prompt and effective treatment is vital. Little states (Canad. Med. A. J. 13 803, 1923) "There are cases on record where death has taken place within 24 hours of the time of onset of the first symptoms."

In cases of diarrhea For the first day or so no sugar should be added to the milk. If the bowel movements improve carbohydrates may be added. This should be the one that is most easily assimilated, so dextrin maltose is the carbohydrate of choice. —W H McCaslan. Summer diarrheas in infants and young children. J. Pediat. 1: 278-282.

If there is an improvement in the carbohydrate may be added. The teaching of the originator of the carbohydrate added should be the one that is most easily assimilated. Dextrin maltose is therefore the carbohydrate of choice. —Summer diarrhea in the young. International J. 9 111-118.

"The condition in which dextrin maltose is particularly acute attacks of vomiting, diarrhea and fever. Recovery is more rapid and recurrence less likely to take place if dextrin maltose is substituted for milk sugar or cane sugar when these have been used, and the subsequent gain in weight is more rapid."

In brief I think it safe to say that pediatricians are relying less implicitly on milk sugar but are inclined to split the sugar element giving cane sugar a place of value and dextrin maltose a decidedly prominent place, particularly in acute and difficult cases. —W J Hoskins. Present tendencies in infant feeding. Indianapolis M. J. July 1914.

evaporated milk formula which will supply about one and one half to two ounces of whole milk to every pound of body weight is reached. This also amounts to five to seven per cent. dextrin maltose. —Strong. Summer diarrheas in infancy and early childhood. Arch. Pediat. 33 233-236 April, 1916.

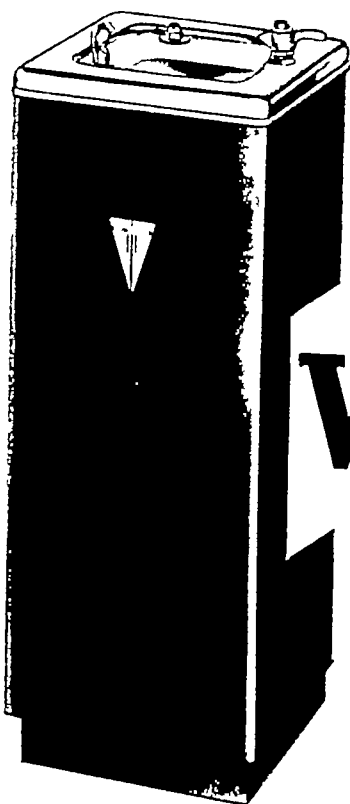
conditions admit some sugar other than milk sugar or cane sugar being used preferably dextrin and maltose. —H E. Small. Diarrhoea in bottle fed infants. J. Maine M. A. 12 164-168, Jan 1922.

"It should be noted that a large percentage of lactose may cause diarrhoea. It is a mistake to suppose that a large percentage of sugar be required if it is better to replace it by dextrin maltose, such as Mead's Nos. 1 and 2 where the maltose is only slightly in excess of the dextrins, thus diminishing the possibility of excessive fermentation." —W J Pearson. Common practices in infant feeding. Post-Graduate Med. J. 6 38, 1930. Brit. J. Child Dis. 25 162-163, April-June 1931.

that group of organisms thrive on) and high in protein. Calcium casein then stopped it and added dextrin maltose to the formula. —A G DeSanctis and L. V. Poider. The value of calcium caseinate milk in fermentative diarrhea. Arch. Pediat. 33 233-236 April, 1916.

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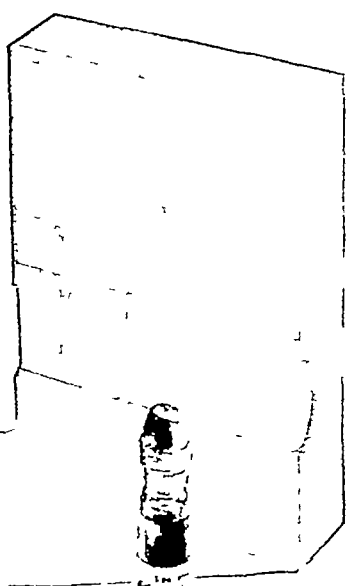
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Group	Prophylactic treatment	Number of men affected with dermatitis
A 45 men	4x0.5 cc. 0.1% ivy extract	9‡
B 40 men	4x1.0 cc. 0.66%* ivy extract	3
C 45 men	none	30

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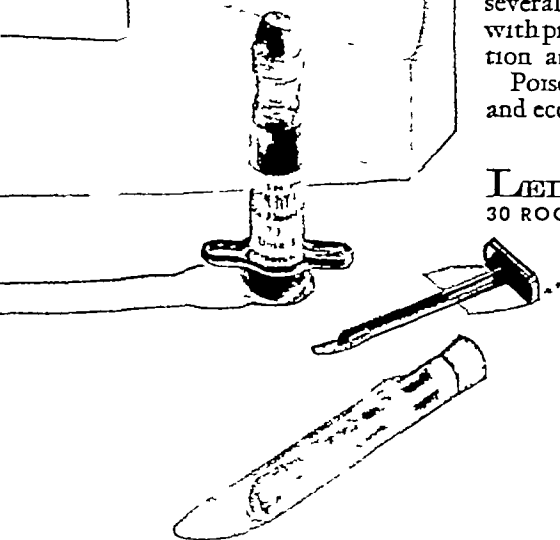
‡The figures in this column indicate the number of men affected during the six weeks after the beginning of the treatment.

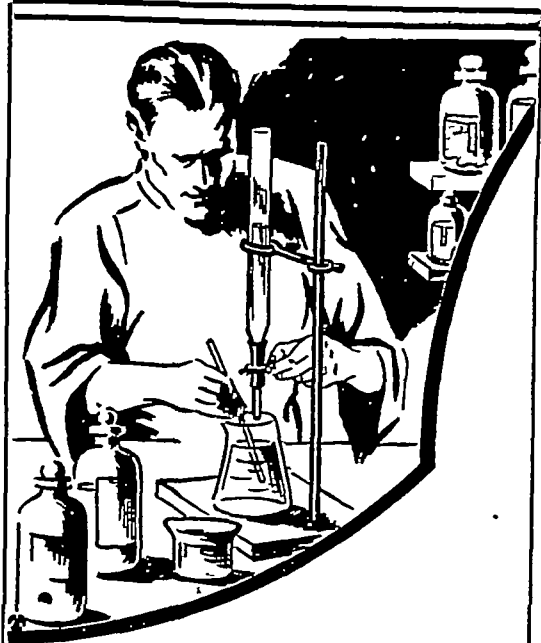
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milk

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Reference *Calcium Metabolism and Calcium Therapy.*

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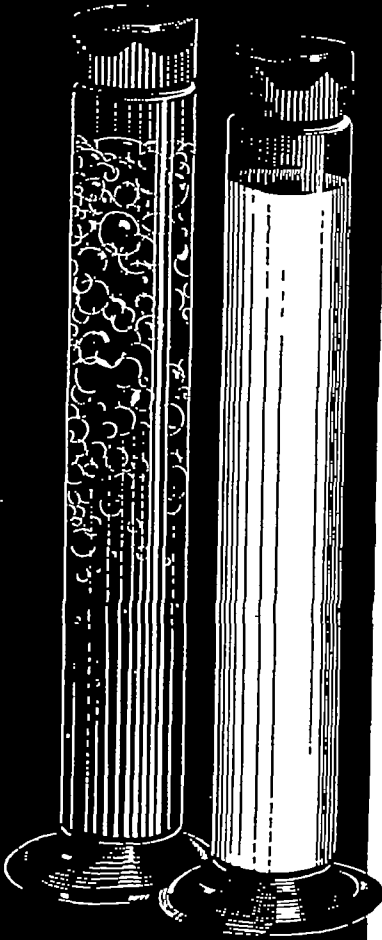
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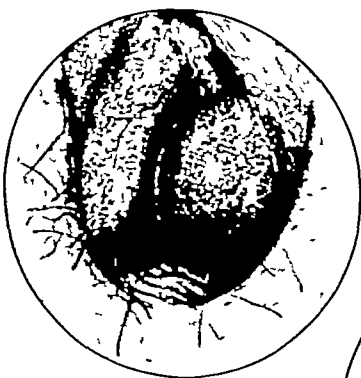


FIG 1 Nov 27 Nose in unshrunk state after 14 days of spraying twice daily with ephedrine, 1% in oil. Mucosa engorged, bluish, turgid and irritated, inferior turbinate blocking nostril. Marked tolerance to treatment had developed.

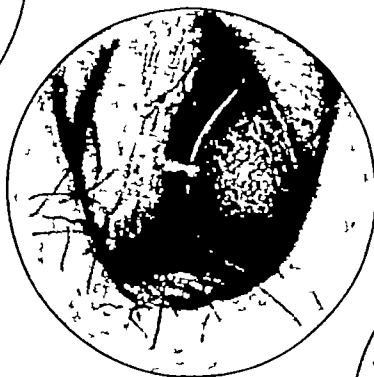


FIG 2 Dec 13 Nose in unshrunk state after 16 days treatment with Benzedrine Inhaler, three times daily. Engorgement reduced, tone good, irritation relieved. Note absence of atony.

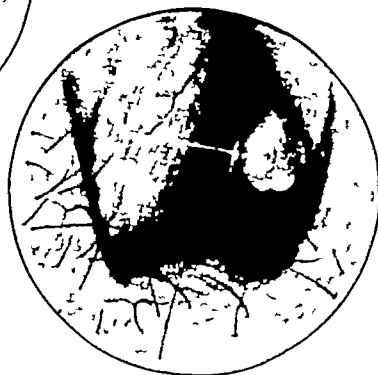


FIG 3 Dec 13 Nose in shrunk state seven minutes after application of Benzedrine Inhaler. High degree of shrinkage indicates no tolerance even after continued use.



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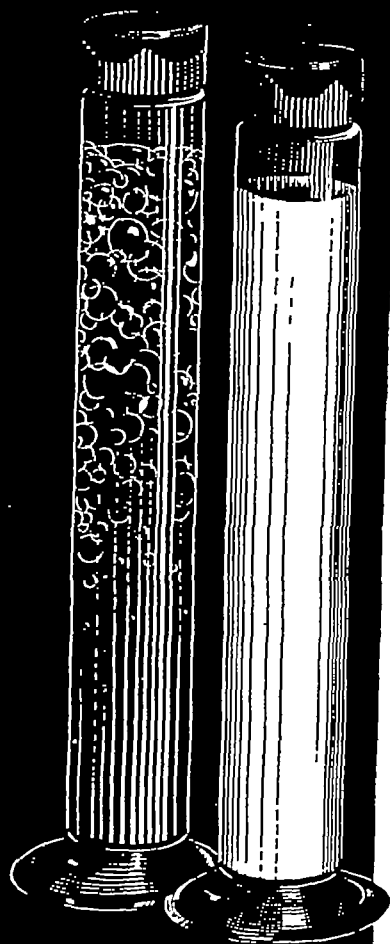
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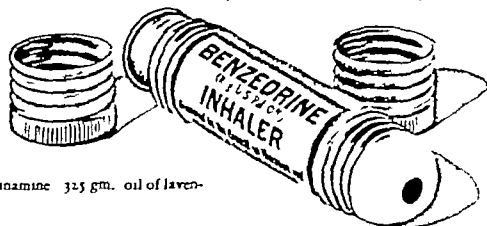
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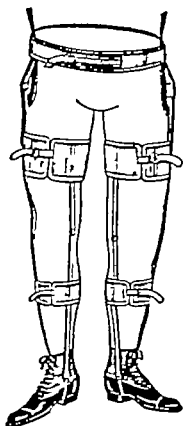
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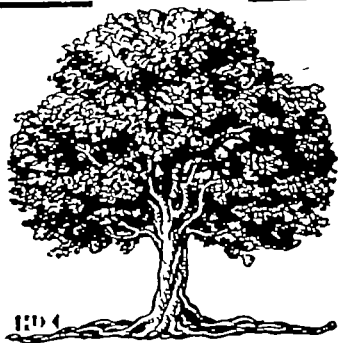
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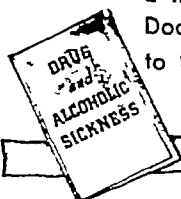
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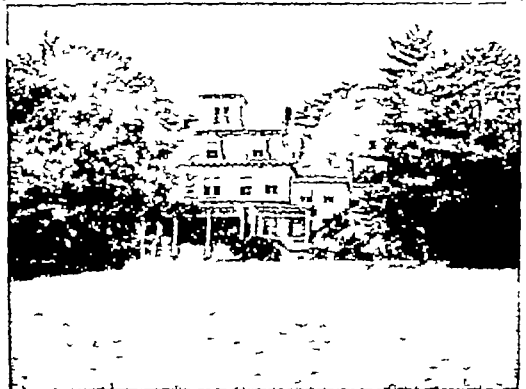
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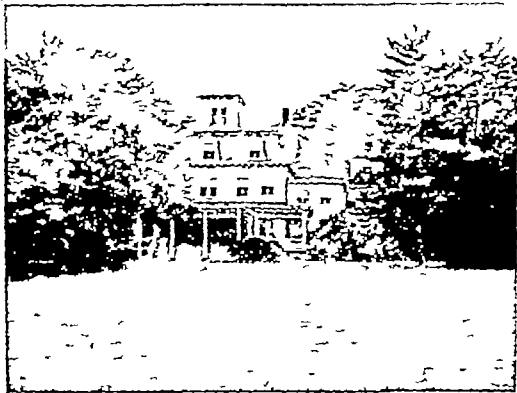


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RELATIONS OF ACID BASE EQUILIBRIUM TO THE PATHOGENESIS AND TREATMENT OF WHOOPING COUGH

JOSEPH C REGAN, M D , *Brooklyn*

AND

ALEXANDER TOLSTOUHOV M D , *New York City*

Considering the complicated nature of the action of bacterial toxins and disease micro-organisms upon the body, it would seem that the field of biochemistry should receive somewhat more thought in infectious processes than has been allotted to it. This lack of knowledge biochemically speaking is particularly conspicuous in regards to infectious diseases when one compares the situation with the discoveries made along the line of such studies in metabolic diseases and in avitaminosis.

Moreover, we are in the position today in regard to certain infectious diseases of having on one hand a specific and valuable prophylactic method or the promise of such, while on the other hand, our therapy is founded on a most unscientific basis. This is the situation in regards to whooping cough. With the exception of pertussis vaccine, treatment of this disease has been founded on a basis largely empirical. For several reasons, later to be considered, vaccine treatment has not yielded the effects which one is lead to expect of a specific biological method. Moreover, in studying whooping cough, there has been meager attention given to the effect of the paroxysm of the disease on the patient's organism, and no effort has been made to investigate the abnormalities engendered in physiological response by this symptom which is one of the most distressing phenomenon in the entire realm of clinical medicine.

This paper aims, therefore, to present a concept of whooping cough as a disease in which the infectious agent not

only produces definite pathological changes in the respiratory tract, but in which marked biochemical changes occur in the body of the patient as a result of these factors, and of the alteration in physiological response to which they give rise. To define this more definitely we wish to present this concept as follows:

- 1 That whooping cough induces profound and characteristic biochemical alterations in the blood and tissues

- 2 That these biochemical changes can be intimately correlated with the characteristic and unusual symptomatology to which the infection gives rise

- 3 That the physiological function of respiration is profoundly affected by the disease and that this inadequate function is closely associated with the biochemical changes

- 4 That the biochemical changes are, likewise, the consequence of the action of the infectious agent, and its toxin as well as the pathological alterations they induce, particularly in the respiratory tract and nervous system

- 5 That these changes of a biochemical nature and of physiological derangement may form the basis on which a scientific concept of nonspecific therapy may be constructed, and that this concept permits the clear explanation of many of the more useful remedies of a hygienic nature which have been utilized in whooping cough

- 6 That studies show that biochemical changes in acid base equilibrium may be corrected rapidly by alkaline therapy and with this correction, there is associated a remarkably rapid cure of the disease and without any danger of alkalosis. During such treat-

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 28, 1936*

ment vomiting is quickly checked within a few days and the paroxysms, likewise, stop usually well within two weeks

Reaction of the blood—Determination
 "Nothing is more constant in the animal economy than the Hydrogen Ion concentration of the fluids which bathe the tissues"¹ During health the normal range of reaction is small and is restricted by a remarkable buffer mechanism so that the blood pH is kept constantly between pH 7.35 and pH 7.45, averaging pH 7.40²

Pathological changes in the acid base balance may have several origins, but as a matter of fact, in most disturbances in clinical conditions the state of the bicarbonate-carbonic acid ratio presents a fairly accurate index of the condition of the acid base balance of the body. It may

thus be said that C_H equals $K \frac{[H_2CO_3]}{[BHCO_3]}$

where C_H equals the hydrogen ion concentration, $[H_2CO_3]$ the free carbonic acid, and $[BHCO_3]$ the bicarbonate concentration or CO_2 combining power, and K the dissociation constant of carbonic acid

Van Slyke³ has accepted this in giving the possible variations in the acid base balance of the blood by stating that the blood bicarbonate may be high, low or normal, and in each of these conditions, the pH may be high, low or normal. Thus, he classified nine theoretically possible conditions and only one of these is normal—that in which both the bicarbonate and pH are within normal limits. These conditions have been divided into "areas" and Van Slyke has clearly defined the conditions which control these different areas⁴

So far as the blood plasma is concerned, studies of acidosis clinically have been more or less limited to a study of the alkali reserve of the blood. Such studies

are much more numerous than those dealing with direct measurements of the pH of the plasma.⁵ Yet, as was pointed out by Peters and Barr⁶ in some decompensated cardiac cases, this is insufficient. The pulmonary and circulatory derangement is sufficient to appreciably influence the CO_2 eliminated. This results in a CO_2 excess and uncompensated acidosis, despite the fact that the bicarbonate may be normal.⁴

Hence, in order to establish the magnitude of disturbances in the acid base balance, it is becoming recognized that it is necessary to determine at least two of the factors, either the alkali reserve by the CO_2 combining power and the hydrogen ion concentration, or the alkali reserve and the alveolar CO_2 tension, the latter also, like the changes in pH indicating the H_2CO_3 content of the blood. The findings can then be expressed in terms of Van Slyke's nine areas. It is upon the classic Hasselbalch-Henderson equation that such considerations are based

C_H equals $K \frac{[H_2CO_3]}{[BHCO_3]}$, or $pH = pK +$

$\log \frac{[BHCO_3]}{[H_2CO_3]}$, $pH = \log \frac{I}{C_H}$

Determination of acid base balance
Present blood chemistry study, In accordance with the modern ideas of the acid base balance and methods of determining it, we have taken into consideration (1) the alkaline reserve and its determination by the CO_2 combining power, (2) the hydrogen ion concentration of the blood and its determination electrometrically and colorimetrically, (3) the CO_2 content of the alveolar air, the latter as an index of the carbonic acid content of the blood

The first two have been routinely determined, the third (alveolar air CO_2) has

TABLE I—BLOOD CHEMISTRY IN WHOOPING COUGH—VALUES BEFORE TREATMENT

	Normal Values	No of determin	Average	Minimum	Maximum
Hydrog ion conc	7.35-7.45	43	7.27	6.95	7.45
Inorg phosph	4-5 mg	74	2.5	0.7	5.5
Calcium	9-12 mg	29	10.5	8.5	13.2
Carbon dioxide	45-60 Vol %	34	58	42	72
Urea	14-30 mg	35	21	18	37
Uric acid	2-3 mg	25	3.4	2.4	6.5
Creatinine	0.5-1.5 mg	40	1.1	0.9	1.3
Sugar	70-120 mg	41	63	35	80

not been routinely done in a sufficient number of cases, and with sufficiently satisfactory results for us to present reliable readings. Alveolar air determinations, most valuable as an index of the carbonic acid content of the blood in a normal or fairly normal respiratory tract and in cooperative patients, may give unreliable figures in the presence of the opposite conditions. The acute inflammatory alterations in the trachea-bronchial tract and the frequency of emphysema and at times atelectasis of some degree in whooping cough, and the young age of the patients in our series we felt would be likely to routinely interfere with reliable results.

Our study began with the empirical use of alkalis in patients with whooping cough following the clinical observation of a patient with gastric ulcer and whooping cough who recovered within a few days following the use of alkaline powders for a gastric ulcer.

Blood chemistry studies were then begun and at first we encountered no signs of acidosis for the CO₂ combining power was within normal range. Further analysis, however, employing electrometric and colorimetric methods for pH showed distinct alterations, and these were so consistently encountered that we could only conclude they bore an important relationship to the disease. In summary these changes bearing on acid base balance were as follows:

- 1. A definite increase in the hydrogen ion concentration of the blood.
- 2. A moderate to marked diminution in the inorganic phosphorus of the blood.
- 3. A carbon dioxide combining power within normal range.

These and other findings have been reported in two previous papers.

Hydrogen ion concentration The pH of the blood expressing the true reaction was determined on the plasma by the electrometric method using the microvessel as described by De Eds and Hanzlik,⁸ and checked up in many instances by the colorimetric method as used by Hastings and Sendroy.⁹ The blood was taken under liquid petrolatum in tubes prepared by coating with paraffin. Special precautions were exercised to use, as far as possible, only short compression of the arm and the avoidance of air entering the syringe with the blood. The blood was taken in the morning before breakfast and the examination was carried out promptly, or the blood was stored for a short period in the ice box after transportation to the laboratory.

The alterations detected were often quite definite and at times accentuated. While the normal pH of the blood plasma is 7.35 to 7.45, the determination in whooping cough in untreated cases averaged 7.27 with a range from 7.22 to 7.30 or 7.35. Lower figures were encountered below 7.22 in a number of instances and there was in one patient a reading of pH 6.98 and another of pH 7.01. We have included these figures realizing they are remarkably low. We appreciate the difficulties technically in accurate pH determinations as well as the precautions necessary in taking the blood. We do not wish to stress any one figure. It is only the general trend of the findings upon which conclusions are placed, likewise, the change noted in this trend under the influence of alkaline treatment. This seems so definitely linked with the change in phosphorus that it must have significance regarding the pH figures.

Phosphorus content of the plasma The determinations were made in our cases by

TABLE II—BLOOD CHEMISTRY IN WHOOPING COUGH—VALUES BEFORE, DURING, AND AFTER TREATMENT

	Before treatment		During treatment		After treatment	
	No.	Result	No.	Result	No.	Result
		Analysis		Analysis		Analysis
Hydrogen ion conc.	43	7.27	45	7.39	35	7.41
Inorg. phosph.	48	2.5mg	62	2.6	48	3.1
Calcium	22	10.6mg	18	9.8	17	10.2
Uric acid	11	3.6mg	15	3.5	14	3.0
CO Combining power	20	56 vol. %	24	53	20	55

the Briggs¹⁰ modification of the Bell-Doisy method. The normal value for phosphorus content of the plasma in children up to five years varies from 4.5 to 7.1 mg per hundred cubic centimeters of blood according to the observations of Howland and Kramer,¹¹ and according to Lyttle¹² is from four to five mg in infants and children. In whooping cough the determinations made showed remarkable alterations. In the majority of these analyses the values were under three mg per hundred cubic centimeters of blood and in quite a considerable number under two mg. The average was about 2.5 mg. The unusually low value of 0.7 mg was encountered in one patient.

Calcium content of the plasma. The calcium content of the blood plasma was determined by the method of Clark.¹³ Considering the normal range in children as nine to twelve mg per 100 c.c. blood, the results showed slight variations from the normal figure (Lyttle) in a small number of cases, but the majority of analysis were entirely within normal range. The average before treatment was 10.5 mg per hundred cubic centimeters. We do not consider the calcium content altered in any constant way in pertussis, although it would appear that slight changes occur as a result of the shifting of calcium in connection with the characteristic phosphorus and pH alterations.

Carbon dioxide combining power of the plasma. The determinations were carried out according to the method of Van Slyke and the majority of the results fell within the normal range, considering the range of forty-five to sixty per cent by volume as normal for children.¹² In occasional instances a somewhat lower figure was obtained, while in others it was higher. The average figure before treatment was fifty-six per cent by volume.

Sugar. The results of analysis for blood sugar by the Folin Wu method in whooping cough are of considerable interest. The average figure of sixty-three mgs per 100 c.c. blood during the paroxysmal stage is at the lower limit of the normal range. In the late paroxysmal stage, the figures are definitely lower, and are well below normal limits in certain patients of whom we have made analyses at this period. Especially low figures have been found in severe cases at the end of the

paroxysmal stage. During the early period of the disease before vomiting is controlled and the appetite returns, the low normal blood sugar would seem due to partial starvation. Later figures show, however, a continuance of the low trend despite the fact that the patient may be already improving rapidly or convalescent, and taking and retaining food, and indeed, often gaining weight. Thus there is a tendency for hypoglycemic values lasting into convalescence.

Uric Acid. The figures for uric acid show the average determinations to be a little high—before alkaline treatment 3.6 mg, during treatment 3.5 mg, and after treatment 3.0 mg per 100 c.c. These figures require explanation as they show quite a consistent high level for uric acid in the blood in whooping cough.

The vomiting during the paroxysmal stage and the diminished intake of water is naturally associated with the diminished output of urine of high specific activity which the patients with this disease so commonly show up to the period of improvement. The finding of an increased uric acid content of the blood together with normal figures for urea and creatinine points to a slight possible damage to the kidney function. This idea is supported by the increased output of urine of a lower specific gravity, which is consistently emphasized notably by French authors, at the time that definite recovery sets in. There are, of course, no signs of gross pathological derangement in the kidney demonstrable by urinary analysis for albumin, blood cells, and casts. No damaging effect of alkaline treatment was noticed in kidney function. This conclusion can be drawn from the gradual lowering of the uric acid content of the blood starting from the beginning of alkaline treatment.

Urinary Chemistry. In the urinary chemistry, a small number of patients' urines were examined quantitatively for ammonia, urea, uric acid, phosphorus, and total acidity as expressed in $\frac{N}{10}$ NaOH.

The figures for urea and uric acid were within normal range. This was true, also, of phosphorus. The figures for ammonia showed often quite a high normal range, especially for children. It was noted that the ammonia percentage dropped in ac-

cordance with the treatment of alkalis. A number of pH determinations on the urine were also carried out.

1 Characteristic biochemical alterations in blood in whooping cough—Resumé

Disturbances in acid base equilibrium are shown by

1 An increase in the hydrogen ion concentration as determined electrometrically and colorimetrically

2 A definite and marked diminution in inorganic phosphorus

3 A CO_2 combining power within normal range.

2 *Significance of blood chemistry changes* As the CO_2 combining power of the plasma showed a normal range, and yet was associated with a lowering of the hydrogen ion concentration and of the inorganic phosphorus, we consider it proved that there occurs in pertussis an acidosis of an uncompensated type which has as a cause the accumulation or increased concentration of free carbon dioxide in the blood.

3 *Classification of this acid base balance* There are available figures for two factors of the possible three blood variants of acid base balance, namely, for hydrogen ion concentration and for CO_2 combining power. The findings allow us to express the disturbance (in acid base equilibrium) in terms of Van Slyke's classifications of nine areas and to place this uncompensated acidosis of whooping cough under area 7 (type 6) which he has defined as due to uncompensated CO_2 excess.

Acid base disturbance distinctive of whooping cough The change in acid base balance is so consistently encountered in the paroxysmal stage of whooping cough that it appears to be distinctive, it has not been observed so characteristically in any other infection. This disturbance constitutes a true acidosis. It should not be confused with the acidosis due to ketone bodies which is so commonly encountered in infections and other conditions. This acidosis due to ketone bodies is also encountered in whooping cough in patients severely ill and suffering from inanition, but it is not distinctive of the disease. Ketosis is, however, a factor in further aggravating the acid base disturbance in some patients with marked starvation.

Significance of diminution in inorganic

phosphorus The total inorganic phosphorus content of the serum showed so constant a reduction that it is a characteristic of the biochemical changes.

We do not know of any condition in which phosphorus is so consistently reduced except rickets. When the first low values were encountered, the possibility of a rachitic basis was, therefore, considered. As further studies were made, we felt this possibility could be absolutely dismissed. As mentioned before, more than seventy-eight per cent of the children were over three years of age, none of the patients except a few of the infants had any active signs of rickets, the accentuation of the diminution of the phosphorus was entirely unrelated to the age of the patient bearing a relation only to the stage and duration of the disease. The rise in phosphorus occurred without any of the classic antirachitic means of treatment and was produced in a number of cases especially in those in which the disease was treated early with a remarkable rapidity as will be shown by the administration of alkalis. Moreover, our blood chemistry studies show the hydrogen ion concentration of the blood is lowered in whooping cough, a condition not considered in rickets.

The lowering of the total inorganic phosphorus of the blood begins, our figures indicate, in the latter part of the catarrhal stage of the disease (1.6, 1.7, and 2.5 mg in three cases) and is already well-established in the very first week of the paroxysms (1.5, 1.7, and 2 mg in four cases).

In moderate and severe types of the disease treated by alkalis, there is an average rise in the third week in phosphorus, which continues in the fourth and fifth weeks, with a slight fall in the sixth week, and the highest level in the seventh week. In mild cases untreated by alkalis, there is on the contrary a lower average curve, so that after a temporary rise in the third week, the average continues low in the fourth and fifth week, beginning to rise in the sixth week.

The reason for this lowering of total inorganic phosphorus in the blood in whooping cough, we do not know. We do not know positively whether it is the alkaline or the acid phosphate ion which is lowered.

Theoretically, it is to be considered likely and in accordance with the concept presented that the change in phosphorus is evidence that the action of the phosphate buffer mixture has been brought into play by reason of the disturbance in the acid base balance

Reason for an uncompensated excess of carbonic acid in the blood in whooping cough It has been stated before that the cause of the changes in acid base equilibrium in whooping cough was the accumulation of free carbonic acid in the blood. It was necessary to explain why such an accumulation should occur in this disease in view of the fact that any increase in the concentration of free carbon dioxide in the blood is normally accompanied by an increase in the depth (and if necessary the frequency) of respiration in order that blood ventilation may be effected

This compensatory mechanism is evidently deficient in whooping cough, otherwise the blood chemistry changes described in the acid base equilibrium would not occur. Therefore, we have looked for an explanation of the failure to compensate on the part of the organism. Such an explanation we consider can be based on general physiological facts correlated with the pathological changes that the disease induces

Physiological and pathological basis for failure of compensatory mechanism

1 The pathological alterations in the tracheobronchial tract

2 The physiological changes induced by the paroxysms by reason of

The obstruction to normal respiratory gaseous exchange induced by the paroxysms

The fatigue of respiratory center caused by paroxysms

The nervous shock of the paroxysms

The abnormal exaggeration of the Hering-Breuer reflex which follows the paroxysms

A Effect of the paroxysm on normal gaseous exchange of oxygen and CO₂ in lungs produces the following effects on cardiorespiratory mechanism

1 Difficulty of inspiration due to partial glottic spasm produces a quite definite effect of "breathing against a resistance"

2 Prolonged and explosive expiratory coughing efforts produce a rise in intrapulmonary pressure

3 Lack of normal "respiratory pump" ac-

tion of inspiration fails to produce an adequate increase in negative intrathoracic pressure.

4 Venous return flow to the heart thus impeded produces dilatation of the small and large venous vessels (especially in upper part of the body) and with this, no doubt, a rise in venous pressure in these vessels

5 Failure of the lungs to adequately expand prevents the normal increase in capacity of the pulmonary circulation and hence overloads the right heart

B Effect of paroxysms of coughing in producing respiratory center fatigue

1 The repeated paroxysms of coughing constitute a shock to the nervous system.

2 The spasm of the laryngeal muscles produce an effect somewhat similar to that of "breathing against a resistance"

3 The inability of the respiratory center to properly maintain normal respiration during the coughing spell weakens central control

4 The anoxemia renders the center more susceptible to fatigue

C Condition of patients between paroxysms—Abnormal exaggeration of Hering Breuer reflex—Ventilation of lungs inadequate

1 The paroxysms of coughing have weakened the respiratory center response to normal CO₂ stimulus and have raised the threshold

2 The Hering Breuer reflex has become abnormally exaggerated due to lack of proper central control

3 The "neurasthenic-like" state induced by fright of the severe paroxysms permits further control of breathing by predominant nervous side of respiratory mechanism

4 The "aura" of approaching paroxysms causes the patient first to breathe cautiously and finally to hold his breath just before the outbreak.

Consideration of various therapeutic measures utilized in whooping cough We have attempted to classify certain of the measures of therapy used in whooping cough according to the concept of the disease presented in this contribution. The classification is on the basis of biochemical or physiological and pharmacological effects

Many of the remedies in the past have not only been ineffective but actually harmful. It seems to us that in the therapy of whooping cough, a remedy may be subject to inquiry on the basis of its influence on the disturbances in the acid base balance which occurs in this

disease. It will be shown that hygienic remedies act notably in this way. There is no question that alkalis surely do. The effects of x-ray and probably ultraviolet light or sunlight appear from the experimental basis to have a decided influence on acid base balance and this should certainly be considered in the explanation of their action.

The same is true of the warm baths at night recommended by Schrobe¹⁴ as well as certain other revulsant measures. Even the gastric lavage with bicarbonate of soda as recommended by Hall¹⁵ acts by removing hydrochloric acid and introducing sodium bicarbonate.

It is probable the action of belladonna, owing to its influence on the abnormal irritability of the vagus nerve, assists in changing the abnormal physiological conditions which exist and favoring factors that permit of return to normal blood alkalinity by improved pulmonary ventilation. It seems that the action of ether is more closely connected with an influence of this type from its effect as antispasmodic. But ether produces also an acidotic tendency.

Both these drugs, however, are not without disadvantage by reason of other pharmaceutical actions and the accompanying physiological effects.

We cannot consider in detail the use of the various depressant or narcotic drugs in whooping cough such as the bromides, opiates, morphine, etc., other than to say that their action is contrary to the mechanism by which recovery is affected. Their action in depression of the nervous system, producing a diminution in appetite and possibly in resistance to the infection, is to be emphasized. Particularly, is it important to avoid the use of morphine and its related pharmaceutical preparations because of their danger of further depressing the respiratory center which the disease has already fatigued, and thus increasing the difficulty of adequate ventilation of the blood. Chloral should never be used. It is undoubtedly dangerous in the cardiorespiratory depression of whooping cough.

Correction of the disturbance in acid base equilibrium—The blood reaction or pH is maintained remarkably constant by means of the blood buffers, most important of which is the equilibrium maintained between the concentration of free

carbonic acid and bicarbonate and the ratio between the two (Normally the ratio is 1/20)

$$C_H \text{ equals } K \frac{[H_2CO_3]}{[BHCO_3]} \quad \begin{matrix} \text{(Carbonic Acid)} \\ \text{(Bicarbonate)} \end{matrix}$$

$$\text{or } pH = pK + \log \frac{[BHCO_3]}{[H_2CO_3]}$$

$$pH = \log \frac{1}{C_H}$$

In whooping cough this equilibrium is altered thus

Numerator	$[H_2CO_3]$	Increased
Denominator	$[BHCO_3]$	Remains same
Increase in C_H		

Result Lowering of pH or Increase of H^+ Ion Concentration.

Correction of the acid base unbalance
Two methods are theoretically available

1 Use of fresh air, oxygen, etc., to ventilate the lungs and flush out the CO_2 . Many factors, however, including the frequent coughing spells interfere with the rapid accomplishment of this. Modern methods will probably obviate this difficulty, especially by forced ventilation.

2 Establishment of normal acid base balance by administering alkalis (particularly sodium bicarbonate) to bring the blood bicarbonates to as high a level as the carbonic acid. This actually can be done safely with considerable rapidity with surprisingly quick improvement and cure of the disease, and with the correction of the metabolic disturbances which it has caused.

Therapeutic measures—Action based on an influence on acid base balance of the blood Many of the hygienic measures which have been effective in whooping cough therapy may now be explained on the basis of their action in correcting the acid base unbalance that this blood chemistry study has shown to exist in the disease.

Measures which improve ventilation of the blood are Fresh Air (in suitable weather) Seashore air "Change in air" (country or seashore) Inhalations of oxygen.

These measures, all hygienically correct, are now shown to be founded on a scientific basis—flushing out the excess of carbonic acid from the blood and by this means, raising the blood pH. Therapeutically, they assist, but they probably cannot be depended on alone as their action is so slow as to allow continuance of

the causative factors. They are, however, aids to a more rapidly acting corrective therapy.

Oxygen Inhalations

Oxygen inhalations mentioned by some of the older authors (Pravaz, Standhal, Bruniche) have more recently been revived by Weill and Mouriquand¹⁶ who employed them in the "hypercoqueluche" occurring in young children, and in cases accompanied by persistent dyspnea between paroxysms. They gave inhalations every one-half hour except during sleep in amounts of fifteen to twenty litres spread over a period of five minutes by means of an open inhalation method with a funnel close to the mouth. The effects in improvement notably were in the cyanosis, the persistent dyspnea, the improvement of appetite, and the moderation of intensity of paroxysms.

Recently, Amberg¹⁷ reported at Staff meeting of Mayo Clinic, the employment by a mask of oxygen or of oxygen and CO₂ in a few patients. In comparing the effect of oxygen with that of CO₂ he found the latter without effect in the one case in which a comparison was made. The same experience was noted in the family of another physician in the treatment of three of his children. In one instance a physician reported carbon dioxide as efficient in the treatment of his child. Amberg found the inhalation through a mask capable of terminating single paroxysm quite rapidly and preventing vomiting. The inhalations do not cure whooping cough, he says, but seem to stop a given paroxysm or set of paroxysms.

Previously, Henderson¹⁸ tried the use of inhalations of carbon dioxide six or seven per cent mixed with air or seven per cent carbon dioxide and ninety-three per cent oxygen using a mask or hood, and giving the inhalations from ten to fifteen minutes either once or twice a day, preferably before a meal or at least two hours after the last meal. He says

In some cases in which the child is uncooperative or resentful of being handled, a paroxysm may develop at the moment that the mask or hood is placed over the face. In these cases, it is best and indeed necessary to delay the inhalation until the paroxysm is past.

Henderson notes that the depth of

breathing is increased by the mixtures six or seven per cent carbon dioxide in oxygen or air while under higher concentration of CO₂ the depth of breathing may even decrease.

Henderson also used a tent adjustable to give a concentration of four to eight per cent carbon dioxide and a flow of more than twenty litres of the air and carbon dioxide mixture into the tent each minute. The treatment was employed in ten children in the paroxysmal stage. Improvement in reduction of paroxysms occurred in three or four days, and by the end of the eighth day, coughing has become so infrequent that the inhalations were discontinued.

In both Henderson series, carbon dioxide four to eight per cent was used with ninety-three oxygen or with air. The inhalation with a mask is an example of the employment of a condition of forced ventilation of the lungs and blood. It is significant and Henderson mentions it, that the percentage of CO₂ in the air or oxygen should be below the amount that would increase the rate of breathing or cause anxiety or strain on the patient. He, moreover, notes that with higher concentration of CO₂, the depth of breathing may even decrease.

Amberg's observations appear to indicate that the oxygen in the mixture was more likely the active component in checking the paroxysm of coughing. Henderson, however, employs his mixture between paroxysms.

We believe, on the basis of blood chemistry studies, that the effect obtained in both Henderson and Amberg's cases was due to forced ventilation of the lungs, with resultant aeration of the blood, relief of anoxemia, and flushing out CO₂ thereby. From the age-old observation of the favorable effects of fresh air in therapy of the disease, and readily admitted effects of closed poorly-ventilated rooms in increasing coughing spasm, this is a perfectly logical contention. Otherwise, the theory of fresh air treatment would be unexplained.

Oxygen Injections

The fact that oxygen is really the therapeutically effective component of an air or oxygen CO₂ mixture is further indicated by the results reported by Mary and

Lereboullet¹⁹ in which the therapeutic value of the subcutaneous injection of oxygen is described. Recovery was obtained in from ten to twenty days following a total of five to ten injections of oxygen in dosage of 100 to 200 c. c. on alternate days.

It should be emphasized before leaving this subject of the use of oxygen in whooping cough that the efficiency of the method in bringing about a sufficient correction of acid base equilibrium will be probably dependent on the use of oxygen under some pressure conditions.

Measures which exert an influence in various ways but mainly by raising the pH of the blood—Sunlight—Ultraviolet Light—X-ray. These measures, we believe, largely exert an action in whooping cough by favoring a return to normal blood alkalinity. Sunlight and ultraviolet light have also a general stimulating effect on metabolism as a whole and are tonics. They are not sufficiently powerful in their action on blood pH alone to bring about a rapid cure. Sunlight and ultraviolet light would appear to act like x-ray.

X-ray while favoring correction of acid base unbalance is not a hygienic remedy and is too powerful for use in a disease where in curative effect it is not equal, we believe, to other methods which have no evidences of possessing any harmful effect, i. e., oxygen, alkalies.

In the action of x-ray, due thought must be given to the work of Hussey,²⁰ Myers and Booker,²¹ Hirsch and Peterson,²² in all of which it has been shown that x-ray induces a rise in pH due to an overcompensated alkali excess.

Hussey showed that in rabbits exposed to radiation by x-ray there is induced a state of uncompensated alkali excess and the time required for the minimum change is the same as for the change in the decrease of leukocytes. Sodium bicarbonate injected into the peritoneal cavity is followed by results identical to those observed following x-ray exposure.

Treatment with alkalies. * Theoretically, if an acidosis of an uncompensatory type, as described, exists, the supplying of the organism with alkaline salts might restore the ratio between bicarbonate and free carbon dioxide. Practically this does occur.

In our cases, the hydrogen ion concentration of the blood has been changed to normal or to the alkaline side of normal by the administration of various combinations of bicarbonate, calcium carbonate, and magnesium oxide. In such instances we have observed, accompanying the change in reaction of the blood, a rise of inorganic phosphorus. In cases in which the disease has been seen in the early paroxysmal stage, the remarkable fact observed was that under the administration of alkaline salts the inorganic phosphorus content of the blood may at times be elevated so quickly that the figure obtained before treatment is started, may be doubled within one week. Thus, a reading of 2.6 mg changes to 5.5, and again from 1.7 mg to 4.3.

This change in the characteristic chemical values has been accompanied by pronounced clinical improvement, with remarkable and rapid amelioration of the distressing symptoms, so that vomiting ceases, on an average, in from four to five days and whooping usually in from ten to fourteen days with occasional exceptions. The patients' general appearance show corresponding improvement and there is a gain in weight.

In a small number of cases in which we had the opportunity of starting treatment in the late catarrhal stage, the disease was aborted before typical paroxysms were established, and this naturally brings up the thought of the possible prophylactic value of alkalies either alone or perhaps in conjunction with vaccine.

In patients treated in the early and middle paroxysmal stage the disease was

* The alkaline powders may be given in various ways, i. e., fruit juices or in milk. Whatever vehicle is used the mother should be instructed to see that the powder is not left in the bottom of the cup otherwise the therapeutic effect will not be obtained. It seems best to give the powders not to dilute, as for instance in a tablespoonful of warm milk with a small amount of sugar added. The child may then follow this by taking a half glass of milk immediately to dilute the powder that has just been ingested.

The powders are prescribed as follows:

Powder No 1—Calcium Carbonate gr 5 or 10
Sodium Bicarbonate gr 10 or 15

Powder No 2—Magnesium Oxide gr 5 or 10
Sodium Bicarbonate gr 10 or 15

Powders are given alternately three times a day each.

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4 Both alterations are well-developed, especially the change in phosphorus during the first few weeks of the paroxysms. Both show a certain degree of parallelism in their course which signifies a close interrelationship.

5 The diminution of inorganic phosphorus bears relation only to the stage of the disease, it has no relation to the age. For the reasons given, in the text, it has no underlying rachitic basis.

6 The calcium content of the blood presents no constant alterations of a distinct type. There is slight instability of calcium but this is (or may be) connected with the shifting of calcium in connection with the characteristic phosphorus and pH alterations.

7 The CO_2 combining power of the blood showed a normal range.

8 The blood sugar is at the low limits of the normal range and actually, especially at the end of paroxysmal stage, shows such low values that a hypoglycemia state is indicated, and this cannot be adequately explained by the partial starvation encountered during the severe stage of paroxysms.

9 The figures for blood uric acid are high.

10 The increase in hydrogen ion concentration with a diminution of phosphorus and a normal CO_2 combining power indicate an uncompensated acidosis.

11 This uncompensated acidosis is due to increased concentration of carbonic acid in the blood.

12 The factors responsible appear to be as follows:

a. Character of the paroxysms of coughing, causing rise in intrapulmonic pressure, at the same time interfering with the normal "respiratory pump" action of inspiration.

b. Fatigue of the respiratory center induced by the shock of the paroxysms and the anoxemia they induce.

c. Exaggeration of the Hering Breuer reflex.

d. Elevation in the threshold of the normal CO_2 stimulus of the respiratory center.

e. Pathological alterations in the respiratory tract.

13 The basis for this lack of compensa-

tion is not difficult to understand. It is dependent, we believe, on several factors which alone and in combination interfere with an adequate ventilation of the lungs and hence, interfere with the normal gaseous exchange in the lungs.

14 On the basis of inadequate pulmonary ventilation and accumulation of CO_2 in the blood, therapy may be directed therefore (1) to flushing out the CO_2 by oxygen, air, etc., (2) to raising the bicarbonate of the blood to a level compensator with the CO_2 by alkalis.

15 The action of hygienic remedies may be thus explained. Fresh air, sea-shore and ocean air, oxygen inhalations, etc. Even the action of sunlight, ultraviolet light, and x-ray appear to act largely on this basis.

16 Biological preparations, such as vaccine cannot be expected to give strikingly rapid improvement, if the loss of acid base equilibrium continues to exist.

17 Alkalies have a rapidly curative effect, and may apparently abort the disease in early cases.

18 The influence of alkalis on the pH of the blood and the elevation of the phosphorus is striking. It coincides with clinical improvement.

19 Tetany of rachitic origin is not the cause of the convulsive tendency of whooping cough.

20 There is no biochemical basis for the assumption so freely expressed that there is an alkalosis in whooping cough. The vomiting of the disease does not produce alkalosis. It is, quite to the contrary, part of a compensatory process to eliminate acid in form of HCL. That it does not induce alkalosis, our blood chemistry findings clearly indicate. Moreover, the response to alkaline treatment and the changes in blood chemistry findings with this is the strongest proof against the presence of any alkalosis in whooping cough. If it were not so, there would be pronounced signs of alkalosis induced by the alkalis and this would show in very high figures for CO_2 combining power.

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quickly cured. It may be said, and this is a significant fact, that the cure bears no relation to the week of the disease when the treatment was begun, being as effective, if not more so, in the cases treated early, as those treated late.

While the treatment proposed is, strictly speaking, apparently symptomatic—in that by adjusting an acid base unbalance it brings about changes in the organism which permit the return to a normal state—yet it probably is very intimately connected with the mechanism by which the termination of the vicious cycle accompanying the infection is brought about.

In routine treatment, it has been customary, at first, to start therapy by administration of sodium bicarbonate in fifteen-thirty grain doses every three or four hours until the urine is strongly alkaline and four to five doses have been given. Then, the administration of alkaline powders is begun containing magnesium oxide, five to ten grains with sodium bicarbonate, ten to fifteen grains and calcium carbonate, five to ten grains with sodium bicarbonate, ten to fifteen grains given alternately three times daily in milk, the powders being mixed with an equal amount of sugar and one dram of milk (hot) added to dissolve them, and followed by a half a cup of milk at usual temperature.

We have continued to utilize these three salts by reason of their values as antacids in neutralizing given quantities of hydrochloric acid in the stomach, magnesium oxide and calcium carbonate being much more effective than sodium bicarbonate for this purpose.²³ It seems, too, that patients take such combinations with practically no gastric distress in the way of distension or discomfort, and without notably altering digestion.²³

Patients vomiting a great deal at first and experiencing difficulty in retaining fluids, should be placed in bed and a five per cent glucose and three per cent bicarbonate of soda solution should be given by rectum in form of enteroclysis. This procedure has been found very effective in some of the children treated. In severe cases, the subcutaneous or intravenous route for fluids must come up for consideration.

Diet

We should emphasize here the importance of diet in whooping cough. While the influence of foods yielding an alkaline ash on the acid base balance is not sufficiently effective alone to restore it to normal, they have a certain contributory importance. Hence, foods that should be taken are particularly those yielding an alkaline ash such as fruits, green vegetables, and milk. The amount of meat and eggs should be kept at the required minimum. Cereals should not be used excessively. Fats should be kept at a minimum, until the disease is controlled. Milk at first is often best skimmed with lime-water added, when no other alkalies are in use.

Glucose The studies in blood sugar mentioned and the starvation often present clearly indicates the necessity for supplying sugar to the organism. The use of glucose as a flavoring agent for drinks is helpful and glucose or sugar should be combined with the alkalies when these are administered. Ginger ale is valuable and will often be retained when other foods are vomited. Lollypops are valuable.

Water Some dehydration appears commonly present especially when vomiting takes place. By reason of the diminished intake of fluids under these conditions and of the possible functional impairment of the kidneys and the high uric acid content of the blood, water has to be given very liberally as soon as vomiting is controlled so that the tissues will be flushed out and a more adequate urinary elimination established.

Summary

1 In whooping cough, blood chemistry studies show pronounced biochemical disturbance.

2 The hydrogen ion concentration of the blood is increased, the inorganic phosphorus is moderately or markedly diminished, while the CO_2 combining power is within normal range. In addition, there is a low normal (or subnormal) blood sugar and an increased uric acid content of the blood.

3 The changes noted especially in phosphorus and often in pH occur early in the disease, the inorganic phosphorus may already be diminished at the end of the catarrhal stage.

$$\frac{[\text{BHCO}_3]}{[\text{H}_2\text{CO}_3]} \text{ and } \text{pH} = \log \frac{1}{C_H}$$

The mechanism by means of which the increase in free carbonic acid occurs has been explained in our paper. As to whether the acidosis is the result or cause of the paroxysm, we have not definitely stated, but it is clear that when the acid base disturbance is corrected, especially by alkalies, the paroxysms disappear.

As to the possible danger from the use of alkalies in infants with pertussis and latent

tetany, our observations show that alkalies are remarkably and rapidly curative in effect in infants, no matter how young, if they are suffering from whooping cough. Some of our most remarkable results were observed in the young age group and we do not hesitate to use them in cases of infants at any age.

The presence of latent tetany in infants with whooping cough may occasionally be encountered, but we have seen no reason to change our therapy of the disease because of this.

CIRCULATORY EFFICIENCY—SURGERY, DIGITALIS, AND DEATH

C. WARD CRAMPTON, M.D., *New York City*

There are two major elements in circulatory efficiency—vasotone efficiency and cardiac efficiency. They are both essential to life. If either weakens, the whole man accordingly weakens. If vasotone efficiency fails, the man dies just as certainly as in cardiac failure.^{1, 2}

The heart has been studied much more than the rest of the circulation. This is largely because the heart is so obtrusively self-evident both to the physician and to the patient. Vasotone is not.

If vasotone is impaired beyond a certain point, even the strongest heart will race, flutter, and finally stop, and the cause of death is often erroneously stated to be "heart-failure." Vasotone is important. It should be given more recognition. The following points are selected as examples of interest in this field.

1 *Vasotone can be measured* (in large part) quickly and simply by comparing the systolic pressures, standing and lying. If the pressure falls on standing, it is bad, if it rises, it is good. There is more to this of course. If the heart rate quickens considerably on standing, it is bad, if it quickens little or none, it is good. This is the writer's test fully described elsewhere.^{3, 4, 11} It is in general use in several fields. For example:

1. In physiological research⁵ to determine effect of hygienic procedures, etc.

2. In colleges⁶ to determine fitness of athletes.

3. In surgery⁷ before operations to guide procedure.

4. In medicine^{8, 9} to determine expectation of death or progress toward recovery and guide therapy (ephedrine, cortin, pituitary, etc.).

2 *Vasotone and surgery*. If vasotone is

poor to a certain point, the man will certainly die during or after the operation, however good the surgeon or the surgery. The following three suggestions have come out of recent experience:

1. *In low readings* (below 70 by scale) where immediate operation is imperative, expect trouble, employ speed, spare trauma, stand by with all resources, and select the less severe operative procedure, i. e., drain an organ in preference to removal.

2. *In low readings, if feasible, wait* and bring up vasotone by rest, care, and digitalis (*vide infra*).

3. *In good readings*, give the patient the full advantage of the wide latitude given by definite knowledge of favorable conditions.

3 *Vasotone and digitalis*. The effect of digitalis on the heart is common knowledge, its effect on the circulation is less well-known. For example, regardless of heart condition, digitalis exerts an influence which tends to bring up the low standing pressure toward equality with the horizontal pressure. If the man has enough vitality to work on, it does so. This is perhaps a better sign of digitalization than mere slowing of pulse. (This was announced first by the author)¹¹. Some surgeons now, if the vasotone is low, delay operation, give digitalis till the index reaches seventy, then proceed. This rationalizes, guides, and corrects the much discussed preoperative use of digitalis to the extent of its real service. The use of this test for this purpose is new. Pioneer work has been done by Dr. J. H. Irwin of Englewood.⁷ Further research is now being carried on at the Mayo Clinic and in several local hospitals.

4 *Vasotone and death*. If the blood pressure is taken sitting something of value is ascertained. If one knows the difference between the blood pressure standing and lying, one knows still more, i. e., something

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Discussion

DR. HARRY BAKWIN, *New York City*—The biochemical approach to the study of the infections marks an interesting departure and Dr Regan has been amply rewarded for his efforts by the results presented.

Pertussis, ordinarily looked upon as primarily a local infection, with only a minimal general reaction, is shown to be a profound disorder, affecting the hydrogen ion concentration of the blood, the phosphorus and sugar metabolism, and possibly renal function as indicated by the high values for the blood uric acid. The low blood sugar values are of particular interest. An average value of sixty-three mg is lower than would be expected from the amount of starvation observed in patients with pertussis and I trust that Dr Regan will further investigate this phenomenon.

Pneumonia is the only other infectious disease extensively studied and in this condition, as in pertussis, the inorganic phosphorus of the blood is markedly reduced although there is no definite change in blood pH.

The type of acidosis described by Dr Regan in patients with pertussis is an unusual one and difficult to explain. Acidosis results from a reduction in the blood base or an increase in the blood acids (CO_2 , chloride, plasma protein). There is no evidence in Dr Regan's data of a decrease in blood base or of an increase in the blood acids. In patients with " CO_2 retention acidosis" such as occurs in morphine poisoning and in some patients with decompensated cardiac disease the venous blood CO_2 is ordinarily elevated, but no such change was noted in the children with pertussis. Dr Regan suggests that the acidosis results from CO_2 retention incidental to the breath-holding during the paroxysm. The CO_2 retention, however, is not reflected by a rise in the blood CO_2 and from this explanation it would appear that any acidosis present is a result, rather than a cause, of the paroxysm.

In regard to the use of alkalis there is one possible source of danger in infants. The concurrence of pertussis and tetany is not

uncommon and is of severe import. It is possible that a latent infantile tetany may be made manifest by alkali therapy.

DR. JOSEPH C REGAN—Regarding the low blood sugar values, they are as Dr Bakwin has said of considerable interest, and starvation does not appear to account for them alone, especially for the low values that persist until late in the course of the disease. We are interested in this and hope to report further upon it later.

As to the disturbance in the acid base equilibrium, it is truly unusual in its accentuation to the extent of an uncompensated type, hence showing an actual increase in hydrogen ion concentration of the blood. There appears no difficulty in explaining it. Perhaps, in the rapid presentation of the data, it was not made sufficiently clear as chemical formulas were omitted in reading the paper, but there is an actual increase in free carbonic acid in the blood. This is proven by the blood chemistry determinations for they show that while the CO_2 combining power, measuring as it does the state of the concentration of bicarbonates [BHCO_3] of the blood is normal, the pH is lowered or in other words the hydrogen ion concentration is increased. There can only be interpreted in accordance with the Hasselbalch Henderson equation as being due to an increased concentration of free carbonic acid.

The relationship between the hydrogen ion concentration, indicated by C_H , and the concentration of bicarbonates, indicated by [BHCO_3], and of free carbonic acid indicated by [H_2CO_3] is such that if two are fixed, they determine the third. Hence, if we determined the hydrogen ion concentration and found it increased, and the bicarbonates and found them normal, we, therefore, have proven that the free carbonic acid is increased. This is shown conclusively in the Hasselbalch Henderson equation

$$C_H \text{ equals } K \frac{[\text{H}_2\text{CO}_3]}{[\text{BHCO}_3]} \text{ or } \text{pH} = \text{pK} + \log$$

RETENTION OF LIPIODOL IN FALLOPIAN TUBES

With Special Reference to Occlusive Effect in Cases of Permeable Strictures

I C RUBIN, M D, F A C S, *New York City*

The complications and sequelae of intrauterine injection of lipiodol and other iodized oils have been variously reported. In some of the publications the sequelae are emphasized, in others they are minimized. The writer has used lipiodol from an early period before any untoward results were spoken of and has since met with consequences only recently described. This paper deals with retention of lipiodol and more especially with its occlusive effect on partially patent Fallopian tubes.

Retention of the iodized oils has been noted by a number of observers, most of whom mentioned the gross lesions found at laparotomy, while a few also described the histologic changes. G F K Schultze¹ published a series of two hundred laparomies performed from one to sixty days following lipiodol injection. In all of his cases there was a residue of contrast oil which appeared as a thin fatty film on the peritoneum of the pouch of Douglas and upon the anterior surface of the uterus. The oil was found in the nonpatent tubes regardless of the length of time elapsing since its injection.

Albano² saw retention of lipiodol six months after the injection, and Aubourg thirty-two months later.

J Novak³ observed foreign body giant cells in the nodules found in the pelvis twenty-six days following the injection (autopsy findings). In another case there was oil retention a year and in a third case two years after the injection. Novak⁴ states that in a fourth case which came to laparotomy fifteen months after lipiodol injection, both tubes were adherent and thickened, and sections showed abundant iodine in organic combination. Lash operated upon a patient twenty-two months after lipiodol injection. This patient had given birth in the interim. Lipiodol had produced a foreign body reaction in the pelvis with the formation of giant cells and cysts. This case demonstrates that normal tubes can apparently rid themselves by peristalsis of the lipiodol which escapes into the peritoneal cavity where the residue sets up the changes described.

E Ries⁵ was one of the first to call attention to the foreign body reaction induced by lipiodol. He operated upon a patient six months after the injection and found a large number of giant cells in sections of the granular homogeneous masses present in the tubes. Rabbiner⁷ in a comparative study of lipiodol injection and air insufflation in sterility reported four sequelae following transuterine lipiodol injection. An x-ray plate taken several weeks and several months later showed contrast media in the pelvis in these cases.

There is no statement in the majority of the reports, as to the status of the Fallopian tubes prior to the use of lipiodol. Unfortunately where the findings are known there is no follow-up. The sequelae are for the most part reported by those who are not entirely convinced of the harmlessness of lipiodol or who are opposed to its use. Nowhere in the literature with the exception of Rabbiner's four cases, has a special follow-up by x-ray been reported, despite the fact that this is a convenient way to check the presence of lipiodol residue.

It goes without saying that if the tubes were closed before lipiodol was injected into them, they remain closed and the patient suffers no appreciable loss of her chances for conception. If the tubes are perfectly normal before the lipiodol injection, the chances are they will remain patent as peristalsis may be relied upon to expell the oil into the peritoneal cavity or into the vagina. When the tubes are constricted intrinsically or extrinsically by agglutinations of their mucosa or serosa, it is a different matter. In such cases the oil can be and is retained, and serves to complete the blockade.

The oil is retained in the tubes because of two factors, (1) impaired tubal function and (2) the viscosity of the lipiodol. In the presence of a stricture, peristalsis

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of the efficiency of a major factor in vasotone, a major factor in life. For example, consider two men lying in bed, each having a systolic pressure of 240. Patient A has a pressure of 220 on standing, Patient B a pressure of 140 on standing. Patient B with a difference of 100 will die sooner than Patient A with a difference of only 20, all else equal. This is the writer's experience in recent observations,¹² others have contributed striking cases.

This thesis is new. The writer presents it herewith cautiously as tentative and suggestive. It should stimulate record over a period of time by a number of

observers. It promises to become a useful datum of reference.

Conclusion

The difference between the standing and lying systolic pressures and pulse rates is an observation of interest and value in medicine and surgery, and is recommended for general use. This communication is presented as an announcement of interest and for record. It is hoped to follow it up by detailed report in each department discussed herein.

515 PARK AVE.

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CHILDREN UNDER SIX WITH IMPAIRED HEARING MUST BE REPORTED

Every child under six years of age who is totally deaf or whose hearing is impaired must be under the provisions of Chapter 856, Laws of 1936, effective immediately.

This law, which amends the Public Health Law by the addition of a new section 320-a, requires every attending or consulting physician, nurse, parent or guardian having charge of any such minor to report at once the name, age, and residence of the child to the State Commissioner of Health and to furnish such additional information as the Commissioner shall require.

If, on investigation, the Commissioner finds that the child is not receiving adequate care and treatment he is required to report the facts to the appropriate welfare or other official or agency which may provide care and treatment. In cases referred to the welfare officer, the cost of such medical or surgical care and treatment as is needed and

which the parent is unable to provide shall be a charge against the local public welfare district.

The law provides further that the State Commissioner of Health, shall in each instance, notify the State Commissioner of Education of his disposition of the case together with the name of the official or agency to which it was referred. The Commissioner of Education, when in his judgment it is desirable, shall communicate to the parent, guardian, official or agency the location of the resident schools for the deaf, the nearest public school having special classes, and also instruction for the hard of hearing with information concerning the advantages offered by the school and the benefits to accrue to the child from attendance at such school, class or instruction—*Health News*, July 27, 1936

TO NIP TB IN THE BUD

New York State will begin an active campaign to detect and eradicate tuberculosis in its early stages by extending the services of sanatoria "into the home and life of every citizen of the district which they serve," it was announced on May 21.

The announcement was made by Dr Robert E. Plunkett at the annual conference of the Local and State Committee on Tuberculosis and Public Health of the State Charities Aid Association, at the Hotel Biltmore.

Dr Plunkett, who is general superin-

tendent of Tuberculosis Hospitals, New York State Department of Health, said the new type of service would be started at the three district State Tuberculosis Sanatoria in Oneonta, Ithaca and Mount Morris, also.

"We are not waiting for young men and young women to come to us after they have broken down with tuberculosis and when almost any one may recognize the disease. We shall make a vigorous and direct search for tuberculosis where it is most prevalent and in this way we expect to find tuberculosis in its earlier stages."

arising from the right adnexa and occupying the entire pelvis. The thick greenish pus has a pungent garlicy odor. The uterus and left adnexa were also found bound down by adhesions to the parietal peritoneum, omentum and sigmoid. The removed specimen showed the same appearance by x-ray examination as the preoperative x-ray findings (Fig. 1c). A control x-ray plate of the pelvis three weeks later showed no evidence of lipiodol residue.

These cases and several others in which infection followed lipiodol injection caused me to proceed very cautiously with its use, limiting it to the occasional patient where an operation was considered. However, without exhibiting frankly inflammatory signs and symptoms, the retention of lipiodol may induce a local irritation and foreign body reaction which has a definitely deleterious effect in partially strictured tubes leading to permanent occlusion. The following three cases illus-

trate tubal occlusion resulting from intrauterine injection of lipiodol.

CASE 1 S.K., twenty-six years old married five years; lipiodol injected May 6 1951 (Fig. 2a). The roentgen examination eighteen hours after lipiodol injection showed the right tube to be blocked at the fimbria, the left tube almost completely occluded near the fimbria, and a slight escape into the peritoneal cavity. Six days after the injection of lipiodol there was residue in the ampulla of the right tube and in the distal portion of the isthmus (Fig. 2b-c). The left ampulla and distal two inches of the isthmus were well-filled with the contrast oil. A greater amount of lipiodol was seen in the peritoneal cavity



Fig. 2a Uterosalphingogram during lipiodol injection

Fig. 2b Lipiodol residue six days after injection, large collection in each tube

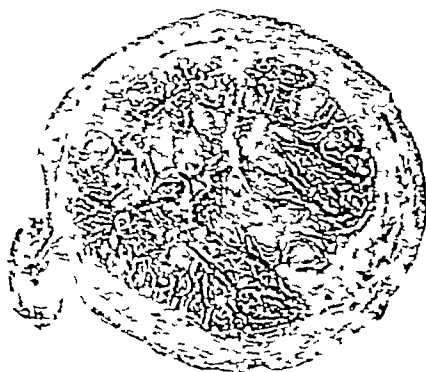


Fig. 2c Residual opaque shadows due to lipiodol injection, sixteen months after injection

Fig. 2d Cross section of ampulla of tube at thickened portion represented by Fig. 2c. Low power magnification showing numerous collections of foreign body giant cells

is as a rule reduced and hence is inadequate spontaneously to force the lipiodol through the tight point. It has been abundantly demonstrated that greater force is necessary to inject lipiodol through the same tube than water or gas and this is especially true when the lumen is strictured. The pressure required for the gas to pass such narrow lumen is frequently as high as 160 or 200 mm hg when CO₂ is employed and greater when lipiodol is used.



Fig 1a Scattered small opaque shadows of lipiodol residue six months after intrauterine injection

Fig 1b Uterosalpingogram at time of injection of lipiodol

Fig 1c Excised specimen of uterus and adnexa showing deposits of lipiodol as in Fig 1a

The force of tubal contractions can be measured in millimeters of mercury. In the average case under the most augmented physiological tubal status as at about the ovulation time, the contractions range at the maximum between fifty and sixty mm hg. Assuming that vigorous antiperistaltic contractions may reach a pressure of one hundred mm hg they would not be strong enough to force all the retained oil through the stricture. Inasmuch as tubal peristalsis is very much diminished in the presence of strictures or adhesions, and in many cases reduced almost to zero, it clearly follows that the thick oil is frequently retained in such tubes.

What is said of lipiodol in the Fallopian tubes need not apply to its use in other anatomical regions. The mere retention of the oil despite its local irritative effects may not be objectionable as for example when it produces serosal cysts in the peritoneal cavity. These encystments may be totally innocuous and need not interfere with the function of the abdominal viscera. In totally closed tubes, it may induce an inflammatory reaction which does not necessarily affect the sterility, but its use in nonocclusive strictures of the Fallopian tubes can manifestly do harm to the patient who strongly desires offspring.

How often occlusion has been artificially thus produced, it is difficult to say. Only a follow-up of the cases by laparotomy or further x-ray exposure can bring to light the sequel which I have encountered.

The first case in which I had the opportunity of observing lipiodol retention in the pelvis was B.L. An x-ray film taken seven months after the iodized oil was injected (May 5, 1927) showed a small globule about the size of a millet seed situated in the region of the left sacroiliac synchondrosis which corresponded to the tip of the left tube. The patient developed a pelvic abscess which was drained by posterior colpotomy ten months after the injection.

A second case, P.L., (Jan 20, 1929) showed small opaque specks scattered in the pelvis six months after lipiodol injection (Fig 1a-b). This patient was operated upon shortly afterward requiring a hysterectomy and bilateral salpingo-oophorectomy. A large tubo-ovarian abscess was found.

whether and to what extent lipiodol shadows were present

In the last few years, forty-three cases of sterility have come under my observation with the history of having had an intrauterine injection of lipiodol not preceded except in two instances by uterotubal insufflation. In twenty-two of these patients, I had the opportunity of getting a skiagram of the pelvis and upper abdomen some months to one or more years after the injection. Fifteen of the twenty-two showed some lipiodol residue

In thirty-two of the forty-three cases a uterotubal insufflation was done sometime after the lipiodol injection. Of these thirty-two cases, eight showed patent tubes, ten totally obstructed tubes, and fourteen strictured tubes. As no data are available except in the two cases regarding the tubal status before the iodized oil was injected, it is a matter of conjecture as to how many of the closed and strictured tubes are normally open before the lipiodol was used. Fourteen of the fifteen cases showing lipiodol residue were later insufflated. Only two of the fourteen had normal tubal patency. In five cases the tubes were found occluded and in seven the tubes were found strictured and adherent. In contrast to this finding was that obtained among five of the seven patients whose x-ray examination showed no lipiodol residue (two patients were not tested). Two showed normal tubes, two had occluded tubes, and one strictured tubes. Nevertheless the high proportion of closures and strictures as demonstrated by uterotubal insufflation after lipiodol injection in an unselected group of thirty-two cases points to some damage to the Fallopian tubes consequent upon lipiodol injection, although it is appreciated that the number of these cases is at yet relatively small, perhaps too small to justify broad deductions.

Obviously it is not of great moment from the viewpoint of conception whether persistent lipiodol shadows are found scattered in the pelvis, between the intestinal coils, at the site of appendices epiploica or the omentum or the serosa of the uterus or even of the tubes. These cystic or semi-cystic lesions may not interfere with the mechanism of conception (Note the report of Lash). However, the persistence of inspissated lipiodol

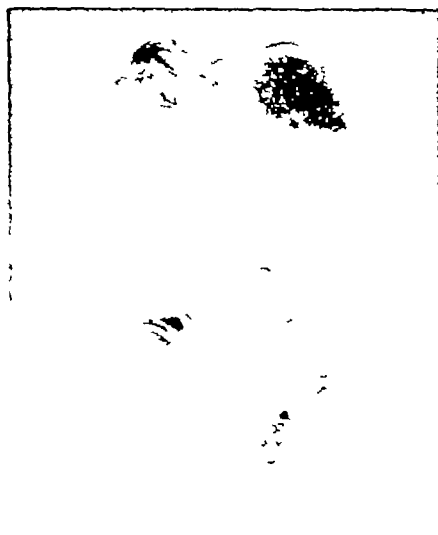


Fig 3a Uterosalpingogram during lipiodol injection

Fig 3b Large masses of lipiodol residue in the tubes eighteen hours after injection of lipiodol

Fig 3c Specimen of right and left adnexa showing distribution of lipiodol deposits one month after injection

This patient was operated upon by me at Mt. Sinai Hospital, Oct. 1, 1931 with the following findings

Uterus was normal in size, there were no adhesions. The left tube was enlarged in a bulbous fashion at the fimbriated end, the fimbria appearing much shortened and the fimbrial ostium not permitting the passage of a fine probe which met with an obstruction within 2 to 3 cm. It was much thickened for about $\frac{3}{4}$ " along the tube. On the right side, the tube was less thickened but clubbed, the fimbria projecting from the completely closed ostium for a distance of a half a centimeter. It was impossible to squeeze out the fimbria on either side.

Surgical pathology Bilateral chronic salpingitis with very marked foreign body reaction. Foreign bodies present also in the distal side of the right tube. (Fig 2d)

CASE 2 K.L., age thirty years, married ten years, lipiodol injection July 22, 1930 (Fig 3a). The roentgenological findings were as follows. The ampulla of the right tube was well-filled with lipiodol, a small amount was seen to pass out into the peritoneal cavity. The left tube was partially obscured by the lipiodol in the uterine cavity. A film taken eighteen hours after injection of the lipiodol showed most of it in the peritoneal cavity and a fairly large collection was present on both the right and left sides (Fig 3b). The stenosis at the fimbria of either tube was a likely diagnosis.

This patient was operated upon by the author at Mt. Sinai Hospital, August 25, 1930. The findings were as follows (Fig 3c).

The left tube was spiral and surrounded by adhesions. Liquid resembling pus escaped from the fimbria. The latter were found puckered and buried beneath the omentum. The left ovary was found to be relatively free. The right ovary was enlarged, adherent to the resected shaped right tube. Its surface was covered by adhesions, in removing it part of the fimbria was freed but squeezing the tube failed to cause fluid to spill showing it was tightly agglutinated. The typical garlicky odor of lipiodol was at once smelled as it escaped from the fimbria of the left tube. The omentum was found adherent to both adnexa.

Pathological report Right sided tubo-ovarian abscess. Left-sided subacute salpingitis, both tubes show numerous foreign body giant cells.

CASE 3 V O'B., age twenty-five, married five years, lipiodol injection October 4, 1929. The report of the x-ray examination is as follows. Both tubes well-portrayed, normal in position but the caliber of the left was slightly greater than that of the right. The right tube was clearly patent, but the opaque oil lay in the left tube, which appears considerably coiled throughout the entire study lasting twenty-four hours.

Just a faint trace of the oil was found in the peritoneal cavity adjacent to the right tube at the end of twenty-four hours but the bulk is still seen outlining the left Fallopian tube as at the beginning of the study. The findings indicate a patent right tube with a partially obstructed left tube, the obstruction being apparently at the fimbriated extremity.

Diagnosis Patent right tube partially blocked left tube. This patient was operated on by the author May 9, 1933 at Mt. Sinai Hospital. The findings were as follows.

The omentum was found adherent to the right tube at the fimbria and to the ovary. The latter showed small hemorrhagic surface cysts. The right tube was coiled up and thickened at its outer two-thirds. The left tube was also found to be coiled upon itself in spiral fashion, adhesions binding the loops. The right ovary was removed with the major portion of the right tube.

Surgical pathology Foreign body granuloma of tube. Multiple follicular cysts and surface psammoma bodies.

The pathological findings were characteristic in all three—inspissation, foreign body giant cell infiltration, closure of the lumen. This lesion is almost identical with that produced by gonorrhea (salpingitis nodosa) and tuberculosis from which it must be differentiated. The result as far as the patient's chances for reproduction are concerned is the same—sterility.

The interpretation of the pelvic x-ray film after the injection is not always easy. Scattered shadows point for the most part to small encysted collections of lipiodol in the pelvis. These are as a rule faded and streaked or spotty. When the tube lumen itself is occupied by lipiodol the shadow is more distinct and conglomerate. Re-examination with lipiodol injection in order to identify the location of the shadow is obviously not desirable. Despite the many enthusiasts few have ventured to repeat the lipiodol injection. Fortunately a simple and safer way is offered by uterotubal insufflation which enables us to interpret the pathological status of the tubes.

Since these experiences the author has met with a number of instances where lipiodol was used by others, the Fallopian tubes being alleged to be patent although I have found the tubes closed. It has therefore become routine practice to take a flat plate of the pelvis in order to see

sorbed and what is most important, *there is no residue*

By contrast, the diagnosis of tubal strictures by lipiodol requires the injection of the oil under fluoroscopic control and several x-ray exposures. The films are not always tell-tale because on the one hand the oil is too thick to traverse easily the narrow lumen at the point of stricture which it may not pass unless excessive pressure is used. If not carefully controlled, the strictured point may be passed without indicating on the film whether any abnormality actually exists. When there is no immediate "spill" into the peritoneal cavity more films must be taken at varying intervals from a few minutes to hours or several days in order not to miss the escape out into the abdominal cavity. When the latter occurs it is not always possible to say from which tube the lipiodol was released. One of the patients referred to me had been subjected to two injections of lipiodol in order to clear up that point. The residue in that case is shown in Fig 4a-b-c-d.

The difficulties in diagnosis attending lipiodol injection are not inconsequential. If the diagnosis is finally made one has the prospect of retention of the oil at the tight point, retention which may last for weeks, months or even years. In one of my patients a subphrenic collection of lipiodol was observed three years after its injection through a Fallopian tube while the pelvis still showed scattered deposits of oil.⁹ Lipiodol residue may not be considered objectionable in the case of Fallopian tubes which were found occluded at the time of the diagnostic injection even though it be followed by some reaction. Advocates of lipiodol ac-

cording to Gauss¹⁰ appear to overlook such consequences. Through the inspissation and nodulation, a permeable stricture is converted into an impermeable stricture. In women whose hope of attaining motherhood is otherwise slender, this result following lipiodol injection is particularly unfortunate since even operative intervention holds but little promise for restitution in such cases while repeated CO₂ insufflation without lipiodol has been successful in bringing about conception in a goodly number. In others, nature has produced the "miracle" without insufflation, without diathermy or non-specific protein therapy or any other measure.

Conclusion

Until a radiopaque substance shall be available having the proper viscosity and density to demonstrate permeable tubal strictures and possessing that degree of resorption which leaves no residue within the tubal lumen after a few hours, thus preventing foreign body reaction, one would do well in instances of sterility to stop using lipiodol and other iodized oils whose chemical composition is more or less the same.

911 PARK AVE.

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Discussion

DR WALTER T. DANREUTHER, *New York City*. Although Dr Rubin does not deliberately contrast the relative merits of transuterine insufflation and uterosalpingography, he does reiterate the absolute safety of the original test for tubal patency and stresses the potential hazards of lipiodol injections. The sole danger of untoward results after gas insufflation lies in disregarding the recognized contraindications for its application, such as active local infections, severe endocervicitis and obesity with a compromised myocardium. Proper equip-

ment, correct technic, and the resting phase of the cyclic changes in the endometrium are essential for the safe introduction of either a gas or a contrast medium.

The injection of lipiodol is not an innocuous procedure. I have found intrapelvic retention of oil by x-ray and at operation on many occasions, at varying intervals up to fourteen months, and in three cases have had to remove encysted masses of residual oil by laparotomy. An inflammatory reaction and consequent pelvic pain had apparently been initiated by the oil injections. I

within the tube lumen where the foreign body reaction causes an obstacle to conception is of greater importance

The writer has used lipiodol in some 150 cases in order to check the findings and interpretation of uterotubal insufflation and for purposes of clinical compari-

son* During this experience he has become convinced of the superiority of the CO₂ method and in view of the disproportionately greater complications and sequelae attending and following lipiodol injection has practically entirely given up the use of iodized oils

Without going into a full comparison between the relative merits of uterotubal insufflation and lipiodol it is necessary to state that strictures of the tube whether permeable or absolute can be readily diagnosed by insufflation when CO₂ gas is used employing an apparatus which comprises manometric, volumetric and kymographic parts The kymographic curve is characteristic of the degree of stricture which can be measured in millimeters of mercury The patient's sensory reactions are pathognomonic and the fluoroscope gives added and corroborative information The momentary pain reaction which is always tolerated by the patient during the brief time of the insufflation helps to locate the site of the stricture The findings at abdominal auscultation also help to locate the site of the stricture Here it may be proper to state that the sensory reaction incidental to insufflation is not more severe than that entailed by lipiodol injections and in my experience appreciably less in most cases There are no sequelae from CO₂ gas insufflation The gas is rapidly ab-

* In August 1928 I published⁸ my observations on the comparative value of intrauterine injection of iodized oils and peruterine CO₂ insufflation, based on a study of 66 cases of tubal obstruction



Fig 4a Uterosalingogram, ten c.c. of lipiodol being required to force some opaque oil into peritoneal cavity

Fig 4b Most of lipiodol in tubes, small amount in peritoneal cavity

Fig 4c Three days after lipiodol injection

Fig 4d Six months after injection showing scattered deposits of lipiodol residue

NON-HEALING OF MASTOID WOUNDS

Causes and Remedies

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There is no more baffling problem confronting the otologist than the failure of a wound to heal following a well-performed simple mastoidectomy. With the extensive training which today is required of a physician before he enters the practice of otolaryngology, the number of instances wherein non-healing of the wound can be traced to faulty surgery upon the mastoid process has been reduced to a minimum. At our institution, of the cases which have been reoperated for reinfection of the mastoid process, the fewest number showed evidences of poor surgical technic at the original operation. Despite this advance in our technical perfection, each of us is confronted too often with a mastoid wound which fails to heal.

Upon studied reflection, it is felt that the causes for the failure in healing can be divided into two groups—constitutional and local. With the former, this paper does not concern itself. The local factors, exclusive of inadequate surgery, have been found by us to comprise, in the main, the following:

- 1 Excessive widening of the tympanic antrum
- 2 Excessive smoothening of the operative cavity
- 3 Improper management of the zygomatic root.
- 4 Continuing necrosis of the inner table
- 5 Suppurations beyond the confines of the mastoid process

Excessive widening of the tympanic antrum. It is a common belief that it is necessary to "open the antrum wide" in order to secure adequate postauricular drainage for the middle ear. The procedure for "opening the antrum wide" necessarily entails removing a portion of the outer antral wall. The tympanic antrum, however, is embryologically a portion of the middle ear and not of the mastoid process. Since the primary aim of the simple mastoidectomy is the removal

of the suppurative focus in the mastoid process, thus enabling the tympanic cavity to return to as nearly normal a condition as possible, any interference with any part of the middle ear may result in a defeat of this objective. In the usual case of acute coalescent mastoiditis, wherein the operation has been timed properly, it can be expected that the otorrhea will disappear within two to seven days. The excessive aural discharge which preceded operation resulted mainly because of the overflow from the mastoid process. During the development of the mastoiditis the reparative processes of nature have been active in bringing about a resolution of the inflammatory process in the lining membrane of the tympanic cavity. Consequently, the so-called posterior drainage of the middle ear through the created mastoid wound is needless since the opening through the drum is not only sufficient, but more efficient from a physical standpoint.

It is our contention, therefore, that all that is required for the cure of the mastoid lesion is a thoroughly performed simple mastoidectomy wherein the antrum is exposed and its walls curetted. The protruding edematous mucosa, which is removed during excessive widening of the antrum, is in reality the mucosa of the middle ear which is undergoing resolution. The removal of this tissue leads to scarification and replacement with connective tissue which has little resistance to infection. In addition, the excessive widening of the antrum brings the aditus into contact with the mastoid cavity and makes its lining membrane subject to reinfection, thus creating a prolonged discharge from the middle ear and mastoid, and a resultant non-healing of the operative wound. It has been our experience that, after the antrum had been opened widely, a pocket frequently would form around the aditus and antrum which sepa-

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have twice found tubes filled with inspissated lipiodol, but have not seen a pelvic abscess due solely to the introduction of oil. I believe that it is wise to utilize uterotubal insufflation as a routine procedure and employ lipiodol injections in special cases only.

A few years ago Mortimer N Hyams described a method of fractional injection of the oil whereby two c.c. of oil are injected before each roentgenogram instead of introducing ten c.c. at once. This procedure provides enlightening information particularly in cases of endometrial distortion and intrauterine tumors, minimizes uterine colic, and makes it easy to stop as

soon as the pressure excites discomfort, with adequate x-ray pictures already available. There are exceptional cases in which the tubes are found patent, and a salpingogram discloses the cause of the sterility. For example, we had a case in which the tubes were so elongated that the fimbriae reached the level of the iliac crest.

Dr Rubin's records emphasize the possibility of the contrast medium being responsible for the subsequent complete obstruction of tubes partially constricted beforehand. The moral of his paper, I take it, is that it is incumbent on all of us to follow all oil injections with repeated x-ray examinations.

BIRTH CONTROL COUNCIL ORGANIZED

The National Medical Council on Birth Control was organized in June 1936, for the following purposes:

1 To control and supervise all medical policies of the American Birth Control League.

2 To initiate, encourage, and execute appropriate scientific research in the medical aspects of birth control.

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The Medical Information Bureau of the New York Academy of Medicine announces the following broadcasts from station WABC and the Columbia Broadcasting System network:

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Subject "The American Disease—Peptic Ulcer"

skull The simple mastoidectomy does not eradicate disease beyond the scope of the field of operation Infected air spaces in the tympanic cavity will continue to suppurate and the mastoid wound will fail to heal because of this Similarly, infected cells in the occipital bone, in the area surrounding the jugular bulb, in the perilabyrinthin region, and in the apical portion of the petrous pyramid are not removed because of their inaccessibility during the performance of a simple mastoidectomy These also are important factors in the non-healing of mastoid wounds

Recognition of Cause and Remedy

Excessive widening of tympanic antrum The manner in which the operative wound is treated and that which is practiced most generally is the closure of the upper portion of the incision and the establishment of drainage through the lower angle Where it is noted that, upon pressure over the antrum during dressings after the first three weeks following operation, a purulent or mucopurulent discharge is expressed largely or solely through the middle ear into the external canal, a pocketing in the region of the aditus and antrum is to be suspected as the cause of the non-healing of the wound Where the mastoid wound has healed, but where the otorrhea persists and is accompanied by edema and repeated swellings at the upper angle of the wound which, upon pressure results in a profuse flow through the middle ear, an excessively widened antrum is to be suspected as the cause

The remedies for this condition are two A pressure bandage, with a cotton or gauze wad over the antrum area, will often suffice for a cure This method of therapy produces an obliteration of the dead space in which the fluid accumulates Where this type of treatment is of no avail, one must then assume that a secreting membrane has lined the artificially created space In such an instance it becomes necessary to reopen the wound, remove all the newly formed membrane, and treat the cavity as an open wound which should be allowed to granulate from the bottom The poor cosmetic result obtained from this method of treatment always can be corrected at a later date

Excessive smoothening of the operative cavity The recognition and remedy for this are mainly prophylactic However, after all other causes are eliminated and it has been determined that this is the cause of the failure of the mastoid wound to heal, the wound should be reopened and some of the inner table removed In this manner the dura which is in reality an endosteum will be enabled to furnish the connective tissue needed for repair

Improper management of the zygomatic roots Those whose mastoid wounds fail to heal because of this error, will present a profuse aural discharge coupled with a swelling situated either at the upper angle of the wound or in front of the auricle at the region corresponding to the zygoma After the mastoidectomy has been performed and the lower portion of the wound has filled in well, the otorrhea will persist, and the patient will complain of pain radiating from the ear toward the frontal region In addition, the soft tissue in the neighborhood of the zygoma will appear edematous and be tender to the touch Roentgenological examination will reveal, in most instances, the cause of the failure of mastoid surgery

The remedy is the surgical removal of the infected tissue In many cases, this can be accomplished through the original mastoidectomy incision with the aid of good retraction If this is not possible, the extension of the incision to the upper anterior attachment of the auricle will afford sufficient exposure for the thorough curettage of the zygoma and its roots

Continuing necrosis of the inner table The failure of a mastoid wound to heal because of this lesion is preventable in a great percentage of cases After the complete exenteration of the mastoid process, the inner table should be carefully inspected for areas of possible necrosis An intact inner table with an area of gross necrosis will present a dark greenish spot at the site of involvement Where this is found, it should be removed surgically In the event that such is not apparent, a condition which most commonly occurs, and the inner table appears grossly normal, this structure should be carefully tested for any evidence of loss in vitality The back of a curette pressed against the inner table will soon reveal any loose or infirm parts Where these are found they

rated itself from the remainder of the mastoid wound and which would drain incessantly through the middle ear. In some instances, complete healing of the wound and middle ear would be followed by repeated swellings in the region of the antrum, which, when evacuated, contained a viscous mucous which was sterile. Reoperation on these cases revealed a cavity which embraced the aditus and antrum, lined by a shiny membrane which upon microscopic examination was found to be a true mucous membrane. None of these conditions was encountered in cases wherein the antrum was exposed simply.

Excessive smoothening of the operative cavity. There is a considerable difference in objectives when performing a mastoidectomy upon a cadaver, or upon a dried temporal bone, and upon a human being suffering from a mastoidal suppuration. In the first instances, a perfect anatomical specimen is desired and is attained by carefully polishing the inner table. In the case of the sick patient, a cure of the lesion and a healed wound are the ultimate objectives. Where the disease in the mastoid process has not progressed to involve the inner table, the indicated procedure is the removal of the diseased mastoidal tissue until the inner table has been exposed throughout. When this has been accomplished, healthy bone will have been reached. It is not necessary then to polish this healthy inner table by means of curettes until it literally shines. The completed operation so performed may look nice but it does not serve the best interests of the patient. By needless surgical trauma to healthy tissue the bone of the inner table may become devitalized, and continue a suppurative process which, by operative measures already undertaken, was expected to resolve. Besides this factor, it is known from clinical observation that the mastoid cavities which have been polished too highly during a simple mastoid operation show sluggish granulations and delayed healing. It is known that the connective tissue repair in the mastoid cavity comes not only from the periosteum but also from the connective tissue in the perivascular spaces of the bony inner table. To destroy their activity by traumatizing the healthy bone is to invite a failure of the mastoid wound to heal.

Improper management of the zygomatic root. The incision which is used for the exposure required in the performance of the simple mastoidectomy does not suffice for the inspection of the zygoma beyond its posterior root. It is this latter portion of the zygoma which the operator scrutinizes and attacks during his surgical procedure for an acute mastoiditis. The anterior root and the zygoma proper are rarely inspected and viewed as a probable source of disease. Where pneumatization is extensive, it is not an uncommon finding to note that the entire zygomatic process is the seat of air-containing cells which have become infected. Roentgenological examination prior to operation should guide the surgeon toward the recognition of the possible involvement of these areas. Where these zygomatic cells are necrosed and are left *in situ* because of inaccessibility of approach or because they were not demonstrable at the time of operation, a failure of the wound to heal will be the result of a continuing destruction of tissue.

Continuing necrosis of the inner table. Where the suppuration in the mastoid process has advanced to involve the inner table in its destructive process, the gross pathology is recognized readily by the granulations present on the dura or sinus. These lead the surgeon to the removal of the surrounding bone until normal sinus and dura have been exposed. In this manner a continuing necrosis of the inner table is forestalled.

Where, however, no gross involvement of the inner plate is evident, it is the custom not to disturb it. Nevertheless, it is possible that a lesion of the inner table is already in existence but is not visible to the naked eye. This microscopic pathological process, if left undisturbed, will continue to advance and the continuing necrosis will result in a failure of the mastoid wound to heal.

Suppurations beyond the confines of the mastoid process. We already have spoken of the importance of the zygomatic roots and the infection of these parts in delaying the healing of the mastoid wound. Pneumatization is not limited to the mastoid process solely, but may be found in all parts of the temporal bone, and in some instances may be discovered to have extended into the other flat bones of the

THE PATHOLOGY OF MENTAL DISORDERS

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The purpose of this contribution is to present a point of view and a working hypothesis, together with the facts which indicate a certain type of research approach to mental disorders

A number of types of physical symptoms are a part of the general picture of states of mental disease. These physical symptoms may be mild in character or may be very severe, in fact many mental patients appear ill, anemic, and emaciated, all of which may be directly due to the acute mental conflict and its accompanying neglect of the nutritive and other needs of the body. However, the whole problem of physical components is not a simple one, and they have been utilized by various investigators as leads and as indications for studying psychiatry from a physical and chemical standpoint. Among the signs and symptoms commonly noted and often described in detail are the initial, constant or fluctuating, fever without obvious local cause, anorexia, insomnia, headache, fatigue, dehydration, disturbed cardiac function, hypothermia and cyanosis of the extremities, alterations in pressure, various vasomotor disorders, respiratory and gastrointestinal irregularities, tuberculosis, altered reflexes, pupillary disturbances, and convulsive states. Sometimes a combination of some of these expressions occurring relatively early in the disorder so masks the mental part that there may be no suspicion on the part of the attending physician that he is dealing fundamentally with a case of mental disease, and he proceeds to treat the patient on the basis of the physical symptoms for a period of time.

The correlation of these abnormal physical phenomena with the large number of other aspects in the total concept of man and his disorders has not been brought about as yet although various special leads have been followed with this in view, as evidenced in the well-known works of Eppinger and Hess, of Kempf, and of Laignel-Lavastine on the vegeta-

tive nervous system functions, of Kretschmer on the body build and character, and the concepts of Adler from a psychological angle, on the part played by defective organs ("organ inferiority") in the integration of the individual and the expressions at the psychological and psychopathological level of adjustment and function.

The psyche and the soma have developed together through the stages of evolution in the relationship of function and structure. They are probably inseparable practically, and even theoretically, on the basis of any logical system of thought. As Bently has said "The bodily system alone does but it physiologically does only by an active interaction with other physical systems and it psychologically does only by making use of its own products and issues." It must always be kept in mind that integration is not merely addition or summation of multiples but it is a multitude of multiples plus organization. There are literally thousands of written treatises on the "constitution" in disease and many of these are of psychiatric import, but the correlation of psychological aspects and symptoms with organ defects and diseases remains to be accomplished. This may be due in part to the fact that most students concern themselves chiefly with studying physiological, morphological, chemical, or psychobiological units instead of taking into account the total situation and breaking it down into even finer divisions where relationships may be revealed. However, I shall mention a few of the attempts that have been made in this field and also a number of ideas that offer us a glimpse of the future possibilities of bringing a new chaotic subject into a comprehensive concept.

The widely quoted work of Kretschmer on the correlation of bodily configuration is a step in the right direction, although it has received some criticism, directed principally toward the method used, and has not been applied in a practical sense.

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should be removed until the inner table feels solid, regardless of its gross appearance

When a mastoid wound fails to heal, and the discharge from the wound is accompanied every so often by spicules of bone appearing at the point of drainage, a continuing necrosis of the inner table is to be suspected. Many of these heal after the sequestra have been discharged, but many others continue to suppurate and continue to extrude dead bone. These latter need reoperation for the removal of the diseased bony inner table. There is no otologist who has not had occasion to reoperate upon his own cases wherein at the primary operation no exposure of sinus or dura was created, but where at the secondary surgical procedure these structures, one, the other, or both were found free in the operative cavity. This finding is always the result of a progressing necrosis of the inner table which was not visible grossly at the time of the original procedure.

Suppurations beyond the confines of the mastoid process. The infected cells in the digastric groove, and in the occipital bone adjoining the mastoid process usually are discernible at the time of operation. In any event, their continued or future involvement afford no distinguishing clinical data for diagnosis. These causes for non-healing of mastoid wounds are only determined when the patient is subjected to reoperation.

Neither is it possible to suspect infected cells within the tympanic cavity as the cause of the protracted suppuration. This reason for non-healing can be suspected only from the extent of pneumatization in the temporal bone as determined by roentgenological examination, and at the operating table. It is important, in such cases, to rule out an acute necrotic otitis as the cause of the continued mastoidal suppuration and the purulent otorrhea. The differentiation lies in the finding of a massive destruction of the membrana tympani, with a resultant marginal perforation, in the presence of an acute

necrotic otitis whereas in the presence of suppurating cellular structure in the middle ear, the perforation is central and the remainder of the drum is intact. Infected pneumatic spaces in the tympanic cavity proper usually will heal of themselves, and it is only rarely that radical surgery is required.

The non-healing of a wound wherein the causative factor is a continued infection of digastric or occipital cells requires revision of the mastoid operation and removal of the offending parts.

Where the failure to obtain healing is the result of an involvement of the perilabyrinth cells or of the air spaces in the apical portion of the petrous bone, further surgery is indicated in the majority of cases if a cessation of the discharge is to be achieved and the patient's life is to be saved. The involvement of these parts present, in addition to the local problem, a serious threat to the life of the patient. Fortunately, most of these show "leads" to the involved portions. In addition, they can be differentiated from the other causes for a mastoid wound failing to heal by the characteristic symptoms which they present. All of these cases show a continued discharge from the tympanomastoidal area, excruciating pain in or around the eye on the side involved, the pain being nocturnal in character, and definite roentgenological evidences of a destructive process in the pars petrosa. The therapy here indicated is adequate surgery for the removal of the suppurative focus in the bony structure which comprises the pars petrosa exclusive of the labyrinth. It is not the purpose of this paper to discuss the means of attack when a lesion of this type presents itself. Suffice it to say that all lesions of the perilabyrinth are not amenable to the same type of surgery. The operative procedures which are indicated for the several varieties of petrosal suppurations, and the recognition of these various types, have been detailed extensively, and are available to all interested.

71 E. 80 St

Lady—"Can you recommend a safe contraceptive?"

Doctor—"Yes. Take a drink of soda water."

Lady (astonished) "Is that all? When am I to take it, before or after?"

Doctor—"Neither before or after, but in-between."

—*Ars Medici*

and personality correlations, as evidenced by the present state of divided opinions among the scientific authorities as to the value and reliability of the studies made in the past. How seriously should be considered the early predictions of Sausure¹ who held that an adoption of Kretschmer's types will be inevitable in the psychiatry of the future? He insisted that the correlation between the somatic types and the distribution of the two fundamental general roots of mental disorder, i.e., the cycloid and the schizoid, must be more critically registered and interpreted in the records of state hospitals.

The majority of researches in this field have been restricted to too few cases, upon which rather broad generalizations have been made, but even a small group well-studied may reveal evidence suggestive of the presence of fundamental principles. For example, the results obtained by Plattner (1932) may be quoted. He studied 100 cases of schizophrenia in males in whom the disease process had been of long duration. Thirty of these patients were of the typical asthenic habitus, sixteen of the athletic habitus, eleven were pyknics, and the remainder were of the dysplastic, or mixed, type, or persons in whom no typical physique was demonstrated. In practically all cases he found "stigmas of degeneration" and dysplasias. The most pronounced anomalies were present in those with the asthenic habitus, in which he found asymmetries of the skull and face, malformations of the thorax, kyphoses, and scolioses of the vertebral column, a feminine pelvis, a scanty growth of hair, cyanosis of extremities, and abnormalities of the genitals. With the exception of abnormalities in the distribution of hair, which were numerous in this group, these phenomena were much less pronounced in the athletic types, in which, when found, they were restricted mainly to the face and skull, frequently presenting acromegalic features.

Physical anomalies were also found in the pyknic types, the most pronounced being knock knees, cyanosis of the legs, varicosities of the legs, and a tendency to a feminine physical build. The anomalies in the pyknic schizophrenic patients were, however, more pronounced than is usual in pyknic persons who develop manic-depressive psychoses. If such find-

ings are borne out by the more extensive investigation of large numbers of cases, will they point toward a set of constitutional factors operating on the causation of mental disorders?

A number of the different aspects of integration may be examined by utilizing the autopsy material in hospitals for mental diseases. As the brain and the tissues supporting the brain, exhibit changes representing the combined ravages of the mental disorder with usually the effects of the deterioration processes, and the complicating terminal physical disorder as well as often other physical lesions, there is little to be gained by the usual methods of making minute histological evaluations of the lesions present to include under some diagnostic mental term, which may mean something different to another investigator.

The term "constitution" as used by morphologists usually includes the inherited reactive materials and patterns and also the early modifications brought about by pre- and postnatal nutrition and diseases, but as the individual operates, in a way, after the fashion of a three arc energy transforming system and is manifested by chemical, muscular, and mental behavior, the psychopathologists have extended the meaning to encompass the latter in terms of "constitutional patterns" determined by tradition, social inheritance types of ideas, moulding childhood personal experiences, mental traumata, etc. That the original endowment in terms of superiorities and inferiorities of the individual plays a large part in behavior and adjustment is self-evident, and seen daily in essentially mental deficiency, various somatic deficiencies and in original defects in emotional and ethical responses, on the one hand, and in the superior physiques, and expressions of superior mental acuity, capacity, and genius on the other. In the study of disease processes several general constitutional types of reaction have been outlined by investigators, and are used in the medical literature as orientation terms, e.g., allergic, arthritic, neuroendocrinopathic, heredosyphilitic, heredituberculous, heredoneoplastic, psychopathic constitution, etc.

In an attempt to evaluate my own material and its various aspects which I believe have a definite meaning in terms

to any notable degree in this country. On the basis of the morphological characteristics, Kretschmer was able to separate individuals with psychoses into what he termed *asthenic*, *athletic*, *pyknic*, and *dysplastic* types.

The *asthenic* type is thin, linear, with long extremities, long neck, long thin muscles, deficiency in the amount of fat, long, narrow, flat chest with prominent ribs and a sharp costal angle, the abdomen sunken, the skull comparatively small in circumference, and the face angular in profile with a long nose and hypoplastic mandible.

The *athletic* type is characterized by a well-developed skeleton with muscles comparatively large and in relief. The individual is medium-sized to tall, with wide shoulders, broad chest, and firm abdomen, the trunk tapering to a narrow waist. The head is long, with skull high and narrow, neck strong and well-formed, face steep and oval, the nose snubbed, and the back of the head steep. The chin is long and well-molded.

The *dysplastic* type or group is represented by a mixture of morphologic and developmental oddities, with bodily proportions which do not fit into the other groups. Many individuals with physical distortions caused by endocrine disturbances are classed as dysplastics.

Investigations of the character and personality make-up of these types indicate that they may be differentiated also from each other by their normal psychological characteristics, and that when mentally disordered they fall into rather distinct reaction types. Those individuals with the asthenic or leptosome habitus are psychologically of the schizothymic, introverted, idiosyncratic make-up with abstract, analytic, subjective, and suppressed minds, with a capacity for schizophrenic disorders. They are shut-in personalities given to autistic thinking. Some of the athletic types of individuals and practically all of the dysplastics tend to develop dementia precox if they become psychotic. Therefore, physically, the dementia precox patient usually exhibits the morphology of one of these three types, although there are many mixtures of the morphological and personality elements which allow for the arrangement of clinical subgrouping.

The *pyknic* type as described by Kretschmer constitutes a large group which contrasts with the asthenic habitus,

and is found chiefly in those who develop the manic-depressive psychosis. The *pyknic* individual is recognized by a pronounced development of the body cavities, and a profuse characteristic distribution of adipose tissue about the trunk. The person is of medium height, figure rounded, paunch protruding, chest vaulted, and the limbs are soft, rounded, often delicate without bellied muscles, and the hands and feet are usually slim and well-formed. The neck is short and massive, set upon narrow rounded shoulders and topped with a large round broad head. The face is broad and "shield-shaped." The character and personality make-up contrasts with the asthenic type, in that the former is more objective, distractible, synthetic, and diffusely emotional, the so-called cyclothymic, extroverted or syntropic type of reaction. The mood tends to shift from elation to depression, and the thinking is more along realistic lines.

When Kretschmer's work first appeared some authorities questioned (and still question) the validity of his findings on the basis of the anthropometric technique used, others felt that too few cases were utilized to warrant the conclusions, and still others, not questioning the method or the general idea, doubted that similar results would be obtained by studying people other than the Swabian population constituting Kretschmer's material. However, many investigators repeated his methods, or using some modification, with other nationalities as subjects and came with few exceptions, to the conclusion that this general principle of grouping types and reactions was basically sound. The question of the value of this work is far from settled at the present time, and many experienced psychiatrists do not accept the concept even in its general form. I have seen more than one of these point out gleefully, for example, a patient with a "pyknic habitus" suffering from a typical "precocious" mental syndrome when the patient had not been measured by any instrument of precision or according to any rule, and was probably dysplastic, with obesity interpreted by the examiner as "pyknic." It goes without saying that our criticisms should be based on a scientific method of evaluation.

More research is indicated on the Kretschmerian concepts of physical build

mention arterial hypertension which attempts to overcome or compensate for a kidney impairment, the involvement of the heart in pulmonary emphysema, adaptive liver congestions in right ventricular insufficiency—all of which create special problems of their own. Dropsy relieves the kidney, but is dangerous on its own pathology. Anemia is compensated for by an increased heart rate. Inflammation, which is the reaction of an organism to an injury, causes scarring and destruction of valuable tissues, crippling the organism. Hyperactivity of the thyroid may take place in typhoid, rheumatic fever, and dysenteric affections, and then become anarchistically independent. As these compensatory reactions are not always predominant in the disorders mentioned, it is possible, if not probable, that the constitution of the individual has something to do with it. It is fairly certain that one system or group of organs predominates over the rest, and there is evidence that in any given individual a group of psychic patterns or possibilities predominates over patterns and tendencies present.

Based on the clinical symptoms, and as general types with a predominating regressive trend, I have selected the schizoid and obliterative reactions, and as hypercompensatory types, the cycloid and paranoid personalities. Any one of these four basic reaction types may function in our social and medical world as normal, neurotic, psychotic or criminal. Moreover, there are mixtures of personality types that require a very detailed study to differentiate what is a predominating trend.

During a period of sixteen years, 2,000 patients on which there were utilizable personality histories, came to autopsy. Of these 453 or 22.6 per cent showed definite evidence of tuberculosis (white males, 223, colored males, 94, white females, 83, colored females, 53) and in 159 or 35.4 per cent it was the actual cause of death (white males, 75, colored males, 43, white females, 17, colored females, 24). Tables I, II, and III give the official mental diagnosis, age distribution, and the age extremes respectively of the four groups dead of tuberculosis. Regardless of official diagnostic evaluation, the age, sex, or any other known factor, these patients in life were of the "regressive"

types with the symptoms of profound depersonalization, shut-in reactions, deep mystical hallucinations, stupid, drowsy behavior, untidy personal habits, unsystematized delusions, confused, destructive, rather aimless violence—all in all those of regression to the narcissistic stage of development as emphasized by the psychoanalytic school. The content is not so important in this type of differential diagnosis, but the manner in which it is expressed is the only safe criterion. An analysis of the 294 cases having had tuberculosis during their lives but were in a healed or inactive state at the time of death has not been completed, but this material already reveals some interesting facts. For example, several who have died of general paresis have comparatively large healed lesions, also many so-called "paranoid precoxes" have large healed lung areas, and again in cancer, hypertensive disorders and arteriosclerotic cases, there is a tendency for the tuberculosis to heal. Among those dying of tuberculosis, the seniles quite frequently go with an acute tuberculous pneumonia. Another interesting fact, which is proving to be practically a rule, is that when a regressive personality, early diagnosed as a catatonic-hebephrenic precox, heals an early once-active tuberculosis, he lives to a ripe old age, developing death lesions late or dying of some other terminal senile disorder.

In this same original group of 2,000 patients, there were 127 or 6.3 per cent with lethal malignancies (white males, 68, colored males, 21, white females, 24, colored females, 14). Of these 60 or nearly 50 per cent were of the gastrointestinal tract. Table IV shows the distribution for the four groups among the parts of the gastrointestinal system, Table V, the distribution of the others throughout the body, Table VI gives the official hospital mental diagnoses, Table VII, the age distribution, and Table VIII, the age extremes.

The hospital mental diagnosis may be disregarded, by and large, in the whole group, as an analysis of the basic reactions showed a definite predominance on the side of hypercompensatory behavior. In this entire group the individuals had such symptoms as systematized delusions of persecution and of grandeur, expansion of ego factors, overactivity with elation

of total reaction patterns, I have disregarded all classical diagnostic terms and labels and have studied the individual as an entity. On several occasions in the

TABLE I—MENTAL DIAGNOSES TUBERCULOSIS CASES

<i>Types</i>	<i>WM</i>	<i>CM</i>	<i>WF</i>	<i>CF</i>	<i>Totals</i>
Senile psychosis	2	4	2	3	11
Psychosis cerebral arterioscler	3	1	0	2	6
Involuntional (schizophrenia)	0	0	0	1	1
Epileptic psychosis	3	1	0	3	7
General paresis	5	5	1	1	12
Dementia precox (Heb. and cat.)	53	22	13	12	100
Paranoid precox	6	2	0	0	8
Paranoid condition	0	1	0	0	1
Schizoid manic	2	2	1	1	6
Manic-depressive	1	0	0	0	1
Traumatic psychosis	0	1	0	0	1
Mental deficiency	0	4	0	1	5
<i>Totals</i>	<i>75</i>	<i>43</i>	<i>17</i>	<i>24</i>	<i>159</i>

WM—White males, CM—Colored males, WF—White females, CF—Colored females

TABLE II—AGE DISTRIBUTION TUBERCULOSIS CASES

<i>Decades</i>	<i>WM</i>	<i>CM</i>	<i>WF</i>	<i>CF</i>	<i>Totals</i>
2nd	0	0	0	1	1
3rd	7	9	2	7	25
4th	20	20	7	6	53
5th	19	2	2	3	26
6th	7	6	2	2	17
7th	7	6	1	0	14
8th	11	0	2	3	16
9th	3	0	1	2	6
10th	1	0	0	0	1
<i>Totals</i>	<i>75</i>	<i>43</i>	<i>17</i>	<i>24</i>	<i>159</i>

TABLE III—AGE EXTREMES TUBERCULOSIS CASES

<i>Group</i>	<i>Age extremes</i>	<i>Mental diagnosis</i>
White males	22	Hebephrenic dementia precox
	97	Hebephrenic dementia precox
Colored males	21	Hebephrenic dementia precox
	78	Senile psychosis
White females	20	Catatonic dementia precox
	86	Senile psychosis
Colored females	21	Hebephrenic dementia precox
	88	Psychosis with cerebral tuberculosis

TABLE IV—CARCINOMAS OF GASTROINTESTINAL SYSTEM

<i>Location</i>	<i>WM</i>	<i>CM</i>	<i>WF</i>	<i>CF</i>	<i>Totals</i>
Stomach	19	3	4	3	29
Esophagus	2	0	0	2	4
Small intestine	1	0	0	0	1
Large intestine	8	1	1	1	11
Liver	3	0	1	0	4
Gall bladder	2	0	3	0	5
Pancreas	3	0	2	1	6
<i>Totals</i>	<i>38</i>	<i>4</i>	<i>11</i>	<i>7</i>	<i>60</i>

past, I have expressed the opinion based on experience in the clinic and pathological laboratory, that the terms "regressive," "compensatory," and "hypercompensatory" as applied to personality reaction phenomena, and the similar terms "regressive" (including atrophic, hypoplastic, sclerotic, connective tissue formations, etc.) and "progressive" (hypertrophic, hyperplastic, carcinomatous formations) used daily by pathologists in their descriptions of pathologic processes, bear a relationship which is something more than a mere analogy. The experience with postmortems in hospitals for mental disorders has revealed in a general way the tendency of such "regressive" types of hebephrenic-catatonic dementia precox to develop diseases in which the "regressive" tissue changes are predominant throughout the body, e.g., tuberculosis, and that those with paranoid developments and essentially affective disorders with their hypercompensatory activities, projective symptoms, etc., are in the great majority of cases affected with "progressive" lesions in the form of carcinomas, or with hypertrophy and decompensation of the heart and other serious circulatory lesions in the aorta or cerebral vessels.

The detailed study of any type of pathological lesion in the body reveals two general types of processes in force. One set of factors and tissue reactions constituting the disease picture is destructive and brings about regression or reduction of the structure and function to lower levels. Another set in force at the same time is constructive, balancing, and attempts to heal or repair the damage. When the former continues in predominance the individual, or part, is destroyed, when the latter wins out the tissue and function is at least partially restored. However, the reconstructive forces may overdo the job and create another pathological problem, or another aspect to the picture.

As we are here dealing with a fundamental and universal principle which can be applied in the study of psychiatric conditions, it will bear further comment. That the healing, readaptative, or compensating, process may in turn become destructive or hypercompensatory is amply illustrated in the problems of internal medicine. As examples one may

precox, together with some signs of tuberculosis infection mingled with mild neurologic symptoms. Inoculation of the cerebrospinal fluid from these patients into guinea pigs previously sensitized with a minimal dose of ultra virus produced reactions. He concluded that dementia precox is possibly the mental component of a variety of meningoencephalitis caused by the neurotropic ultra virus of a tuberculosis type. These findings may justify additional research in this particular field but one is more tempted to contemplate the possibility of an underlying constitutional factor or set of factors favorable to the development of both, rather than a causal relationship between the two disorders.

We are now in a position with this constitutional aspect of the problem to desire a more accurate and detailed knowledge of the reactions, in the bodily organs and particularly in the endocrine glands, secondary, or due chiefly, to the tuberculosis. A large amount of anatomopathologic, including histopathologic, knowledge has accrued through the past years from various sources, on the effects of tuberculosis in the body, but I am not aware of any combination study that has paid special attention to the body build, the circulatory apparatus, and the endocrine gland changes with an evaluation of the age factors, length of illness, etc., in a manner to allow a comparison with the material from dementia precox cases so studied. The pathologists connected with the sanitariums and the large hospital clinics where numerous cases of tuberculosis with no mental components, or a minimum of mental disorder, are studied and autopsied, are in a position to make valuable contributions on this subject.

Certain characteristics of the blood may have valuable constitutional aspects. For example, the blood groups or types as found in individuals and in the different races are rather strictly constitutional in

nature—a field which has been touched, but by no means thoroughly investigated in connection with personality patterns.

TABLE V—MISCELLANEOUS CARCINOMAS

Location	WM	CM	WV	CF	Totals
Lung and bronchi	6	3	1	0	10
Prostate	12	6	0	0	18
Bladder	3	1	1	1	6
Kidney	0	1	0	0	1
Testicle	0	1	0	0	1
Uterus	0	0	1	3	4
Breast	0	0	7	2	9
Pituitary	3	1	0	1	5
Thyroid	0	0	0	1	1
Skin	0	2	2	0	4
Tongue	2	0	0	0	2
Parotid	1	0	0	0	1
Sarcoma bladder	1	0	0	0	1
General lymphosarcoma	1	0	0	0	1
Sarcoma kidney	1	0	0	0	1
Myosarcoma thigh	0	1	0	0	1
Melanosarcoma choroid	0	1	0	0	1
Totals	30	17	12	8	67

TABLE VI—MENTAL DIAGNOSES CANCER CASES

Types	WM	CM	WV	CF	Totals
Senile psychosis	16	4	2	3	25
Psychosis cerebral arteri sclerosis	5	5	1	1	12
Inv. melancholia	1	0	0	0	1
Epileptic psychosis	1	0	1	0	2
Psychosis, brain tumor	1	0	2	1	4
General paresis	3	2	0	0	5
Dementia precox (Hebe. and cat.)	19	6	7	5	37
Paranoid precox	9	1	4	3	17
Paranoid condition	8	2	3	1	14
Manic-depressive	5	0	1	0	6
Mental deficiency	0	1	3	0	4
Totals	68	21	24	14	127

TABLE VII—AGE DISTRIBUTION CANCER CASES

Decades	WM	CM	WV	CF	Totals
4th	2	1	1	3	7
5th	7	3	2	3	15
6th	14	10	5	1	30
7th	17	2	8	2	29
8th	18	1	5	2	26
9th	9	4	3	3	19
10th	1	0	0	0	1
Totals	68	21	24	14	127

TABLE VIII—AGE EXTREMES CANCER CASES

Group	Age extremes	Lesion	Mental diagnosis
White males	32	Adenocarcinoma pancreas	General paresis
	93	Adenocarcinoma prostate	Senile psychosis
Colored males	34	Carcinoma testicle	Paranoid condition
	86	Carcinoma lung	Senile psychosis
White females	34	Adenocarcinoma stomach	Paranoid precox
	86	Adenocarcinoma gall bladder	Paranoid condition
Colored females	34	Adenocarcinoma uterus	Dementia precox
	87	Adenocarcinoma stomach	Paranoid precox

or suspicion, some alternating with depressions, consistent aggressive trends, agitated depression with projection, crystallized paranoid systems, boastful attitudes with pathological lying and with regression only to the homoerotic level of development. The reactions in these extreme cases may thus serve as a basis to study some of the various mixtures one encounters

These general findings lend themselves to a scientific study of a method of "individual statistics," by an estimation of the personality expressions and types of response in the living individual including the "natural history" of his life as well as of his disorder, which from the standpoint of psychobiological reactions, is an expression of the sum total of his life patterns and experiences in terms of regression and compensation. The facts so gained should be compared and correlated with the bodily make-up, disease history, and postmortem findings by the modern detailed methods also expressed in terms of regressive and progressive tissue pattern and states. Sample cases worked out by this method have revealed interesting leads toward a more comprehensive constitutional pathology.

This type of approach lends itself well, incidentally, to the study of many constitutional phenomena which may or may not have a bearing upon mental disease in general or of some type in particular. For example, some special attention of this character could be directed to the symptom complex (variable and not as yet specific) which has been termed "vagotonia" as it appears in various problems in internal medicine, dementia precox, tuberculosis, or in combinations of these disorders. What does the group of symptoms included under "vagotonia" really mean in terms of constitutional patterns? And of what significance is constitutional angiohypotonia or idiopathic permanent hypotension as a factor in schizophrenic states? These and many other questions regarding the constitution are approachable for investigation.

Some years ago Sir Frederick Mott described excessive connective tissue changes and alterations in the tubules and interstitial cells for the testicles of dementia precox males. There was found a marked thickening of the tubules with alterations in the spermatogenetic ele-

ments ranging from slight changes to complete absence of these cells. Following his leads, I found similar changes in the gonads and in addition a general sclerosis of all major endocrine glands. This work received a lively criticism on the basis that many of these cases (but not all) died from some prolonged condition such as tuberculosis. This criticism is justified in part, but was rather superficial, as some of the cases were early or accidental deaths without signs of a definite chronic disease in the body. Moreover, the connective tissue changes were in excess and more selective than those found in bodies dying from tuberculosis not complicated by mental disorders.

I have also found a degree of vascular hypoplasia and some widening of the lymph channels in a high percentage (eighty-five per cent) of hebephrenic-catatonic forms of psychoses. This is not a definite or "full blown" status thymolymphaticus or status lymphaticus, but it is apparently a partial development of that condition. I have called it "larvated" status lymphaticus. The heart is comparatively small which is due in part to the general atrophy associated with the wasting of the tissues, particularly in those dying of tuberculosis. So the heart weight cannot serve as the sole criterion. The size and thickness of the walls of the aorta with its branches are safe indexes of the condition. That this vascular hypoplasia occurs frequently in cases of tuberculosis, where it is primary and perhaps one of the fundamental features of the constitution, there is some published evidence. How frequently this occurs in tuberculosis in the general run of sanitarium cases not associated with frank mental disorder remains to be determined.

Hebephrenic-catatonic dementia precox and pulmonary tuberculosis (as well as other forms) occur together with striking frequency, the tuberculosis eventually causing the death of the patient. The nature of this association or relationship is not known, although the possibility of a tuberculous origin for some cases of dementia precox continues as a topic for discussion (F d'Hollander and Rouvroy, H Baruk, Bidermann and Albane, Toulouse, P Schiff, Valtis and Diense). Louis Condere found the general habitus characteristic of tuberculous patients in sixty per cent of patients with dementia

IRRADIATION IN THYROTOXICOSIS

J THOMPSON STEVENS, M.D., *New York City*

The lessons learned through the experience of having treated several hundred cases of toxic goiter and hyperthyroidism during the past twenty years with roentgen rays and radium may be recorded as follows

1 Intelligent, skillful roentgen or radium treatment in these diseases or malfunctions of the thyroid gland is followed by results which are admittedly second to no other method of treatment known to medical science.

2 With faithful cooperation on the patient's part, the end results of radiotherapy are good in practically all cases

3 In proper hands irradiation in thyrotoxicosis is a simple and safe procedure for the patient to undergo There is absolutely no mortality due to this method of treatment.

4 Roentgen and radium treatments are given without pain, feeling, or sensation of any kind and, in the vast majority of instances, patients are not confined at home or in hospitals

5 Recovery usually follows only seven to ten sittings for treatment.

6 Operative failures can be corrected by postoperative irradiation

Statistics in more than 10,500 cases of thyrotoxicosis treated by irradiation are available for study Of these 66.22 per cent were cured by irradiation and 21.07 per cent were markedly improved, thus giving 87.29 per cent favorable results While these figures are at least equal to those obtained by any other method of treatment known today, it is felt that they do not show the real true value of roentgen or radium therapy in thyrotoxicosis This contention would seem to be supported by the fact that some fifteen radiotherapists throughout the United States have reported cures exceeding eighty per cent. A still smaller group of radiotherapists have reported in excess of ninety per cent of cured cases Further study of the statistics reveal that the fact that the few who have compiled the greatest number of cases, that is, those having the most experience, without exception, reported by far the best results One

group with a large series of cases reported 88.85 per cent cured and 8.52 per cent improved, a total of 97.37 per cent of good results

Author's Statistics

The study and treatment of thyrotoxicosis by irradiation has been of vital interest to me for many years In 1921 my first paper appeared in *The New York Medical Journal*, five years later a second paper was presented before the Radiological Society of North America and was published in *Radiology* in 1926, and a third paper upon this subject read before The American Roentgen Ray Society in Montreal was published in *The American Journal of Roentgenology and Radium Therapy* in 1928 At the Philadelphia meeting of the American Medical Association in 1931, it was my privilege to discuss again the treatment of thyrotoxicosis by irradiation and to record my results in 270 controlled and carefully followed cases The paper was published in the *Journal of the American Medical Association*, December 5, 1931

This report is based upon 403 cases of hyperthyroidism treated prior to December 31, 1934 with their one year of follow-up observations completed December 31, 1935 Of these 367 or 90.9 per cent, experienced perfect health following irradiation and were therefore classed as cured Another group of seventeen cases, or about four per cent, recovered from all the symptoms of hyperthyroidism but were still ill because of other complicating diseases and were therefore classed as improved In other words, about ninety-four per cent of the cases under roentgen or radium therapy experienced favorable results In fifty-one cases surgery had failed to produce the desired results in spite of the fact that each one of the cases had been operated from one to three times In each of these something less than the usual amount of irradiation was followed by recovery Recurrences of thyrotoxicosis were surprisingly few and were noted in only three per cent of instances In each of these

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Another phenomenon may be worth careful investigation. K. Hermann reported a change in the blood picture in schizophrenia.² His findings in general confirmed those of Sagel and of Carriere on the shifting to the left of Arneith's leukocytic picture in precox, and he considered that this shifting, when pronounced, should be regarded as a sign of a chronic or progressive process. This finding may have some basic constitutional bearing as Burger³ found this deviation of leukocytes to be characteristic of some families.

Evidence has accrued from the studies of Schilder, Jelliffe, Alexander, Menninger, and many others that in all diseases whether the presenting emphasis is on the physical or mental aspects, there are special and characteristic integrations of the somatic elements, the symptomatic behavior and the more or less unconscious libidinous trends. What is the normal functioning integration of these aspects when they are largely minus pathological alterations? How do they integrate and how do they influence or perhaps even determine parts of each other? How do they disintegrate and again integrate perhaps in a modified way? Where does a special pathological determining element come in? Is it a nervous system or a circulatory system element primarily? These are a few of the questions with which this field fairly bristles. Whether normal or abnormal, the organism behaves with its capacities for expression, and such matters as symptoms may be studied from several viewpoints, but when we study the pathology of mental disorders we must not only investigate the brain but the other organs that support the brain, and finally the whole individual.

That mental disorder results from a combination of some special constitutional organization or construction (morphological and chemical) and of the action of cultural forces is a justifiable concept. With some types of defective constitution, the individual may continue to maintain a balance of function if the cultural pressure is not too great. However, a particular mixture of adverse circumstances may at any time disturb any balance gained by the adaptive forces of the, in part, deficient individual and precipitate a psychosis. This psychotic reaction is the attempt to regain equilibrium and, as

before mentioned, is composed of both regressive and progressive trends and elements. When the individual is so constructed as to enable him to mobilize a large amount of physical and mental reserve to meet the environmental load, the general picture is that of paranoia or of manic-depressive reactions without serious intellectual impairment, but with overactive functions, aggressive attitudes, and alert demeanor. In order to react in this manner the individual must possess a soma so organized as to have a fundamental capacity for overcompensation, as the principle of inertia acts here as elsewhere and the compensating forces seldom stop at a dead level point. They overshoot the mark causing disorders of their own. In contrast to this picture, when the individual is so constructed and integrated that the regressive forces are predominant and the compensating ones weak, or at least not permanent (often acting in spurts), we see the withdrawal reaction, functions carried on with a minimum of energy expression, and in general the dementia precox type of response, with a fundamental inability to muster reserve forces, excepting for short periods of time usually during spells of delusional confusion. With these contrasting pictures in mind we are ready to proceed with a finer analysis of details in the structure and chemistry of parts and functions, and until this has been done we are not justified in repeating an oft-quoted phrase "There is no pathology of mental diseases." However, if we conduct our researches on the groups of mental disorders according to types indicated by the labels placed on them by superficial clinical studies, different workers will obtain different results, as has been the experience of the past. We must work first with extreme types and attempt to establish definite criteria for estimating regression trends and their contrasting phenomena, hypercompensatory capacities and tendencies, and from here we shall be able to work out the various balances and mixtures of reaction types. Therefore a long program of bioanalysis of several aspects of human behavior and disease lies before us.

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Author's Statistics

The study and treatment of thyrotoxicosis by irradiation has been of vital interest to me for many years. In 1921 my first paper appeared in *The New York Medical Journal*, five years later a second paper was presented before the Radiological Society of North America and was published in *Radiology* in 1926, and a third paper upon this subject read before The American Roentgen Ray Society in Montreal was published in *The American Journal of Roentgenology and Radium Therapy* in 1928. At the Philadelphia meeting of the American Medical Association in 1931, it was my privilege to discuss again the treatment of thyrotoxicosis by irradiation and to record my results in 270 controlled and carefully followed cases The paper was published in the *Journal of the American Medical Association*, December 5, 1931

This report is based upon 403 cases of hyperthyroidism treated prior to December 31, 1934 with their one year of follow-up observations completed December 31, 1935 Of these 367 or 90.9 per cent, experienced perfect health following irradiation and were therefore classed as cured Another group of seventeen cases, or about four per cent, recovered from all the symptoms of hyperthyroidism but were still ill because of other complicating diseases and were therefore classed as improved. In other words, about ninety-four per cent of the cases under roentgen or radium therapy experienced favorable results In fifty-one cases surgery had failed to produce the desired results in spite of the fact that each one of the cases had been operated from one to three times In each of these something less than the usual amount of irradiation was followed by recovery Recurrences of thyrotoxicosis were surprisingly few and were noted in only three per cent of instances In each of these

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 29, 1936*

cases recovery followed a minimum amount of further irradiation. As already stated no case was classed as cured or improved until at least one year of post-treatment observations were completed. By a cure is meant that the pulse rate returned to normal, lost weight was regained, tremor disappeared, the swelling or enlargement of the thyroid gland disappeared, and the basal metabolic rate returned to normal. The post-treatment observations or the follow-up period consist of monthly clinical examinations and basal metabolic estimations.

Clinical Course Following Irradiation

1 Occasionally, patients with hyperthyroidism suffer with increased toxicity for a few days following the initial treatments. Fortunately this is soon followed by relief, and gradual improvement takes place.

2 Nausea, vomiting, and diarrhea, when present, are among the first symptoms to improve and disappear.

3 Early during the course of active treatment the strength begins to improve and pruritus disappears. Soon the weight increases, while palpitation, tachycardia, tremor, dyspnea, and the swelling of the thyroid gland decreases and finally disappear. At this time the basal metabolic rate will generally be found to be within the normal limits.

4 The eye symptoms are among the last to disappear, and in some cases the exophthalmos never completely disappears. This is also true in cases treated surgically.

5 In patients who have had severe thyroid intoxication for months or years, myocarditis frequently develops. In these cases the pulse rate is lowered but may never return to a perfect normal, no matter what method of treatment—whether radiologic or surgical.

745 FIFTH AVE.

In the presentation, the author showed two series of lantern slides demonstrating technique, also, comparison of patients before and after treatment.—*Editor*

Discussion

DR. LUCAS S. HENRY, *Syracuse*.—When I received Dr. Larkin's letter asking me to discuss Dr. Stevens' paper, my first mental reaction was to recall a paper read before the Surgical Section of this Society several years ago, on the subject of Treatment of Exophthalmic Goiter. This essayist, a surgeon, threw a lantern slide on the screen, showing a very extensive x-ray burn involving the skin and deeper structures of the neck, and remarked somewhat as follows:

This view tells its own story of the results of x-ray treatment in this disease. Further discussion of this form of treatment is unnecessary.

The paper to which you have just listened clearly manifests the unfairness of these comments.

Dr. Stevens very clearly defines his methods of treating thyrotoxicosis and the excellent results which he reports form a record of outstanding achievement for irradiation therapy in this disease. Such results called to the attention of the physician who first makes the diagnosis of thyrotoxicosis must give him reason to stop and

consider seriously whether he may best serve the interests of his patient by referring a given case to the radiologist or to the surgeon. It would seem that the progress made by radiation therapy in this disease during the past ten years would warrant a larger percentage of cases treated by this method rather than by surgical removal.

The ingenious methods of treatment described by Dr. Stevens, together with his results are certainly to be commended. I am particularly impressed with his complete follow-up methods which, in the last analysis, give him real information on which to base an honest appraisal of his results.

The lesson which may be drawn from this paper is the fact that thyrotoxicosis may be successfully treated in a very large majority of cases, provided proper methods are instituted for a sufficient length of time. It is absolutely essential that the radiologist have complete control of the patient, and not be interfered with by others. It is my feeling that many of the failures encountered by some of us are due to lack of insistence on thorough treatment with proper follow-up to accurately appraise our results.

Doctors, urging everyone else to have physical examinations, often neglect themselves. This is the season when physicians are going on vacations and outings, and

engaging in strenuous outdoor sports, and President Dobbins, of the Queens County Society, suggests that it is a good time to have that long-delayed "once-over."

CANCER OF THE ESOPHAGUS PERFORATING INTO THE RIGHT BRONCHUS

WILLIAM L. WATSON, MD, FACS, *New York City*
Assistant Attending Surgeon, Memorial Hospital

At the Memorial Hospital we have found that most of the patients with cancer of the esophagus coming to autopsy have died rather suddenly as a direct result of perforation of the malignant ulcer into an adjacent vital structure such as the aorta, pleura, mediastinum, subclavian vein, lung or bronchus. The end came rather shortly, from a few minutes to seven days, after onset of the clinical symptoms suggestive of perforation. The time interval apparently depended upon the site of the lesion and the structure invaded.

With this experience in mind, it seems worth while to record a case in which the patient lived seventeen months after perforation into the right main bronchus.

That the lesion was cancerous was proven by biopsy of tissue obtained by esophagoscopy. That perforation into the bronchus had occurred was proven by roentgenographic, fluoroscopic, and bronchoscopic observations coupled with the clinical symptoms.

In the literature there are several reports of patients with cancer of the esophagus who lived for short periods after perforation into the bronchus was diagnosed.

Mitchell's patient¹ lived four weeks without developing septic pneumonia. Price and Gibbs² report a similar case but the exact duration of life after perforation was not known because perforation was not diagnosed until autopsy. Guttman and Held³ report a case in which violent coughing spells, loss of weight, and fever had led to a diagnosis of pulmonary tuberculosis, but in which, after four months rest in the country, esophagoscopy and fluoroscopy demonstrated a carcinomatous fistula between esophagus and right bronchus. Our patient lived in comparative comfort for a known period of seventeen months.

The following case history we believe to be of sufficient interest and importance to warrant a short clinical report for the following three reasons: (1) A sixty year old man with a cancer of the esophagus perforating into his right bronchus lived a year and a half without developing a septic, aspiration pneumonia. (2) By means of a suitable gastrostomy and a carefully outlined diet (previously reported³) the patient's general condition was well-maintained.



Fig 1 X-ray taken on admission showing the carcinomatous stricture at the middle third with the barium being projected into the right bronchus through the broncho-esophageal fistula



Fig 2 Microphotograph ($\times 150$) of the biopsy material showing squamous carcinoma, grade 2, radio-resistant

tained up to the end. (3) Even one case of cancer of the esophagus, so far advanced and obviously infected, surviving for that period of time suggests that this disease is not always as rapid in its growth and dissemination as we had formerly believed.

W V, a sixty year old negro cook from South Carolina was admitted to Memorial Hospital, March 22, 1932. His family history was not significant. He used moderate amounts of alcohol and smoked cigars, cigarettes, and a pipe. He had had one attack of what was called gastritis thirty-one years previously for which he was treated at Roosevelt Hospital



Fig 3 Patient W V up and about on the third postoperative day. The gastrostomy stoma is satisfactory and the feeding catheter is in place. This was removed on the seventh postoperative day and reinserted only for feedings.

Symptoms of the present illness dated back only three months with dysphagia and pain in his chest. This was slowly progressive. On admission he was able to take only fluids and had lost twenty pounds.

Examination showed a well-developed but poorly nourished and moderately dehydrated male negro. His teeth were carious, broken, worn, and infected at the gum margins. His chest expanded poorly and was not clearly resonant. His heart was not enlarged. The cardiac sounds were normal. The blood pressure was 160/85. Blood examination showed eighty per cent hemoglobin, 3,880,000 red blood cells, 13,900 white blood cells with sixty-nine per cent polymorphonuclear leukocytes.

On fluoroscopy the swallowed barium met an obstruction at the middle third of the

esophagus where the lumen was quite irregular and much narrowed. At this point much of the barium passed through the stricture into the lower esophagus but a large part was seen to project to the right and enter the right bronchus. On inspiration it was carried out into the smaller bronchioles and produced a fit of coughing. It was technically difficult, because of coughing, to obtain a roentgenogram showing the barium out in the lung, but Fig 1 shows the location of the disease in the middle third of the esophagus with the barium projecting to the right and entering the bronchus and branching outward toward the periphery. Subsequent fluoroscopy and x-ray films confirmed these findings.

Esophagoscopy demonstrated an infected, vascular, almost completely obstructive neoplasm twenty-six centimeters from the upper incisor teeth and fourteen centimeters below the cricopharyngeal constriction. A specimen was removed and reported by Dr F W Stewart as squamous carcinoma, grade 2, radio-resistant. (Fig 2)

Bronchoscopy showed an area of edema and redness in the upper right bronchus just below the carina and there was a moderate collection of mucopurulent material, but no definite fistulous tract could be visualized.

The day following admission a Janeway gastrostomy⁴ was done under novocain anesthesia. The wound healed by primary union. The temperature was normal from the second day and the patient was up and about the ward on the third postoperative day (Fig 3).

He was soon taking a diet (previously reported⁵) of more than 3000 calories daily through his gastrostomy stoma and had gained four pounds by the fifteenth postoperative day when he was discharged from the hospital to a local nursing institution. He remained fairly well until his death seventeen months later.

1088 PARK AVE.

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"SHOO-O O MR STORK!"

More than fifty per cent of white married women practice birth control, Dr Raymond Pearl, Professor of Biology at Johns Hopkins University, declared at the conference of the Milbank Memorial Fund in New York City on March 26. The statement was based on a study of 30,949 white and negro women in twenty-six large cities.

The women were from all social, economic and educational levels in fourteen States and the District of Columbia, and were fairly representative of the general population, Dr Pearl said. During the last

five years Dr Pearl has been directing an investigation of human fertility with special reference to family limitation.

According to their own statements 42.7 per cent of the white women and 16.4 per cent of the negro women had practiced some form of birth control before the time of the study, but the study indicated a wider resort to contraceptive methods than the admissions would reveal, according to Dr Pearl. He said he believed that fifty-five to sixty per cent of the white married women practiced birth control.

BETWEEN MENTAL HEALTH AND MENTAL DISEASE

B LIBER, M D, DR.P H, *New York City*

Editorial Note Under this title will appear short summaries of "transition cases" from the service of this author in the New York Polyclinic Medical School and Hospital The descriptions are not complete clinical studies, but will accentuate situations from the point of view of individual mental hygiene such as crop up in the every day practice of medicine

Jealousy

A young couple. She is a good stenographer and he is a mural painter Each one of them can earn a passable living, and apparently love each other dearly a happy mating

The surprising fact is that, while usually, that is when any one of them has the slightest complaint, they come together to the doctor's office, this time she is here alone.

Is there a beginning of a blemish in this beautiful union? The crack that comes sooner or later in many marriages?

To be sure, she has nothing to say about her home life. Everything is all right there But lately she has been sleepless and suffering from bad headaches, which an exact examination fails to explain.

At the second call comes the expected outburst

"Doctor, I cannot endure it any longer! John is awful! He is all changed I hate him And I am getting crazy"

Investigation shows that John is really the same and is in love with her but that she is somewhat tired of him. He is an artist with Bohemian inclinations and all his friends of both sexes are jolly and over-sociable. They meet and eat and drink and joke and dance. That is precisely what our patient resents Why are they all so familiar with one another? Why must the women give her husband a friendly but vigorous whack over the shoulder?

Did she ever see anything indecent or suspicious? No If something should happen, she would commit a crime, she says In fact she used to be just as easy-going as this present bunch It was her character, indeed, that endeared her to her husband But now she cannot stand it in others

And so at night she lays wide-awake and imagines all sorts of events which she fears, but invites, while he sleeps the slumber of the angels She works up a frenzy and is angry at his calm and innocence. Why is he so insensitive to her suffering?

Sometimes she has even feeble beginnings of hallucinations Her husband is kissed by another woman, or something similar

She feels he belongs to her not only in a moral sense but in a physical sense as well He is her property

And so the poison of jealousy trickles into her mind. At first subtly, then with a storm that is threatening to make havoc.

As she keeps on creating scenes and refusing his sincere advances and embraces, he gets colder and the circle becomes more vicious If this situation goes on she will certainly push him to the wall and he will do just what she fears he might do, as in a famous passage in Dante or in D'Annunzio's "Citta Morta" or in Echegaray's well-known and powerful "Gran Galeotto"

The long days when John is at work are empty for her and she does not know how to fill them

She is told to go back to her secretarial work, as her job is still waiting for her But, no, she will worry the whole day what happens in her absence.

She is in a turmoil—and all of her own making

For some time danger was brewing, a catastrophe seemed inevitable and the doctor's efforts were futile. But finally a remedy was found a trial separation, the opposite to the much-discussed trial-marriage She left for a town where an old aunt was living, but, as far as he was concerned, for parts unknown She was ordered to stay away a year, at the end of which she knocked at the door of the apartment kept intact by him and he received her in his arms

It turned out to be a story with a happy ending, as they lived cloudlessly thereafter, that is, for the last several years She went back to her work and, in her spare time, participated in the pranks of the whole group, like a good sport. And, incidentally, she was cured

611 W 158 St

LOOSE LEAF SYSTEM

Professor "Can you give me an example of a commercial appliance used in ancient times?"

Student "Yes, sir, the loose-leaf system used in the Garden of Eden"—*Staley Journal*

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EDITORIALS

Private Practitioners in Public Health

In all health work, public or private, based on medical service, the physician is the keystone to success or failure. Medical research, medical technic, and medical judgment are the decisive factors in any and every form of medical practice, whether directed by the state or controlled by the individual practitioner in his private office.

Under the American system of government, only the administrative features of public health work should be discharged by the state. Medical procedures should be performed by the practicing physician, at the expense of the beneficiary if he is able to pay, of the government if the recipient is financially unable to provide for his own needs.

This principle is efficient, economical, and consistent with the American theory of government. While there are certain mass measures and sanitary projects that are best controlled by the state, on the whole medical bureaucracies do not develop the initiative or high standards of performance achieved under the stimulus of competitive private practice. Public health agencies should utilize the knowledge and skill of the private practitioner in formulating and carrying out any program involving medical service.

In the past year the Medical Society

of the State of New York has done a great deal to strengthen the private practitioner's position in public health work. Its participation in the Pneumonia Control campaign sponsored by a group of public and private agencies has helped to carry up-to-date diagnostic and therapeutic methods to physicians all over the state. Its endorsement of the Health Department's program for syphilis control ensures medical cooperation in one of the most essential tasks undertaken by public health officers.

Whenever occasion has offered, the medical profession in this state has shown itself "well organized to cooperate in a modern health program" and able to "bring its forces into immediate action." The public will lose greatly if the government fails to utilize this powerful health agency to the utmost.

Defensive and Offensive

In an age which recognizes propaganda as one of the most effective weapons available to any cause, the physician must learn to turn this powerful instrumentality to his service or be destroyed by its uses in the hands of skilled adversaries. The past decade has witnessed a steady stream of propaganda from interested lay sources, designed to undermine the private practice of medicine and supplant

it with a medical bureaucracy controlled by politicians and lay social welfare workers. This propaganda has penetrated our social structure deeply. It has been disseminated particularly among the impressionable collegians who will soon reach their political majority but who have neither the experience nor critical judgment to appraise the system proposed to them at its true merit—or lack of it.

A number of professional organizations, aware of the threat to medical practice and the public health in this unchecked propaganda, have made notable efforts to counteract its effects by vigorous presentation of the opposing arguments. Unfortunately the profession has neither the funds nor the paid personnel to carry on this work on anything approaching the scale possible to its richly endowed adversaries. It has, however, one hundred and fifty thousand potential free propagandists in the individual practitioners who better than any one understand the evils of state medicine and who more than any one (with the possible exception of their patients) have a stake in the retention of independent medical practice.

The first step in effective propaganda is facts. These can be obtained by application to the Bureau of Economics of the A. M. A. and discriminating reading. The second element is zeal, which all practitioners must feel when they consider what they stand to lose by inertia. Fortified with these two, every physician in the country is in a position to supplement the organized propaganda of the profession with personal missionary work among teachers, parents, journalists, and other voters and taxpayers of his acquaintance.

Hoarseness

The symptom of hoarseness is present whenever the function of the vocal cords is interfered with in any manner. It may denote simply a mild laryngitis or it may be the result of a severe involvement of the larynx by tuberculosis, syphilis or a malignant growth.

The intensive campaign for the education of the public concerning the importance of the early detection of cancer should not overlook stressing hoarseness, since of all locations within the body, the larynx gives warning of a growth during its earliest stage. Particularly is this true of intrinsic or chordal carcinoma, a type of malignancy which, when removed before it has extended to involve extra-laryngeal tissue, is a curable disease.

The profession generally is aware of the significance of hoarseness as an early sign of laryngeal cancer. It is our duty to impress upon our patients the necessity of investigation by a certified laryngologist as soon as this symptom appears. Schwartz¹ rightly states that "if these principles are practiced many preventable deaths will be avoided."

The War Gases

With our daily papers filled with rumors of war, and with the governments of several nations undertaking extensive precautions to prepare their people against the eventualities of gas attacks, the medical profession which, in the last analysis, will be called upon to combat the ravages of gas warfare, should familiarize itself with the types of chemicals used and their effects upon humans.

These can be divided into five groups.¹ The asphyxiating gases, such as chlorine and phosgene, cause a marked irritation of the mucosa of the upper respiratory tract leading to eventual pulmonary edema and death by asphyxiation. The vesicant gases, represented chiefly by mustard gas and lewisite, produce sloughing of the skin, eyes, and of the respiratory tract.

The gases which induce sneezing are usually not very harmful except when present in high concentration. Arsin, for instance, can produce acute arsenic poisoning. The tear gases are closely allied

¹ Schwartz L. *Preventive Medicine* 69 June 1936

to this group. Both can pass through the carbon filter of a gas mask and cause the wearer to remove the mask, thus exposing him to the more harmful gases.

The most dangerous of all are the toxic gases, such as carbon monoxide, and hydrocyanic acid. These, by their rapid destructive action on the combining power of the hemoglobin, will cause death in a few minutes.

In addition, there are other chemicals whose formulas are carefully guarded and concerning whose action little is known. In the main, however, they may be considered to fall within these groups.

CURRENT COMMENT

"TRUE LOVE OF COUNTRY is not mere blind partisanship. It is regard for the people of one's country and all of them, it is a feeling of fellowship and brotherhood for all of them, it is a desire for the prosperity and happiness of all of them, it is kindly and considerate judgment toward all of them. The first duty of popular self-government is individual self-control. The essential condition of true progress is that it shall be based upon grounds of reason and not of prejudice. Lincoln's noble sentiment of charity for all and malice toward none was not a specific for the Civil War, but is a living principle of action."—From among the many wise things from Elihu Root's pen.

"EVERYWHERE, ON EVERY SIDE, it makes no difference where we go, we as physicians are confronted with organizations which are planning welfare and health work in which we as doctors are vitally interested and yet are rarely consulted. Why should this attitude be permitted to continue, even though we do admit that it is but a natural resultant of the tendency of the medical profession to retirement and self-effacement? It seems that when the opportune time arises for creating active opposition to the inimical programs of such organizations, militant action should be undertaken. The semi-negative attitude or pose to which we have become accustomed is no longer possible if we are to retrieve even a modicum of our rights, which are being swallowed up by the numerous semi-quasi medical organizations or health conservation societies that base their activity on the services of the medical profession, and are supporting their appeal to the pub-

lic by the free services of physicians. On such foundations these organizations are erecting structures which, if we as physicians are not careful, will further entangle us in tentacles of obligation and self-sacrifice from which it will be increasingly difficult to escape. Control of such activities is one of the needs of our profession, we must somehow more rapidly determine and develop the best remedy and more boldly apply it."—From the *San Francisco Medical Bulletin*.

"THE ONLY PART the layman can play in the control of syphilis is to recognize that it is the most prevalent of all recognized communicable diseases."

"This statement is credited to Dr. Joseph E. Moore of Johns Hopkins School of Medicine, who was the principal guest speaker at a successful Social Hygiene Institute conducted May 27 and 28 at New Rochelle, N. Y."

"That the lay public does not at present appreciate the prevalence of syphilis was indicated by another cryptic statement of Dr. Moore's to the effect that if scarlet fever were as prevalent as syphilis there would be a panic throughout the nation, with parents striving to move away from infected areas, and tremendous pressure would be brought to bear upon health authorities to improve preventive and clinical service."—*Westchester Medical Bulletin*, July, 1936.

"WITH ITS STEADILY MOUNTING toll of death, disability, and disfigurement, the automobile is more to be feared than many serious diseases. No group that is interested in the preservation of life and health can ignore this condition. The medical profession urges the examination of all applicants for operators' licenses as one step in the reduction of the present shocking rates of automobile injury."—*The New York Medical Week* of recent date.

"SHALL IT BE THE STATE, the patriarchal institution upon whose lap we shall lay the full destinies of the individual, to whom we will look for the regulation of our living manner, and the provision of our multiform needs, or shall it be the individual, grown to the stature of a civilized and social being, who will as a sovereign carve his own destinies in the company of, with the help of, but at the cost of none of his fellow men?"—Dr. Iago Galdston, of the New York Academy of Medicine.

Society Activities

Workmen's Compensation

The following communication referring to the payment of physicians for testimony before the Department of Labor has been received from Mr Michael J Murphy, Director of the Division of Workmen's Compensation of the Department of Labor, under date of June 30th

Dear Dr Kaliski

In accordance with your request over the telephone, today you are advised that instructions have been issued to the referees to allow a fee in accordance with that set forth in the Fee Schedule for attendance at a hearing when the doctor's attendance is required by the referee or the Industrial Board, or by the insurance carrier or employer

These instructions were issued in accordance with Rule 18 contained in the front part of the Fee Schedule which provides

Attending physician's appearance at a hearing on a compensation claim when required by referee, insurance carrier or employer, a fee of \$10 00, etc.

This rule was promulgated to guard against claimants or their representatives producing doctors at hearings unnecessarily which would result in unduly burdening the referees to take testimony to determine if the doctor's attendance was required

The Industrial Board has the rule under advisement and if they hold to a different view, will undoubtedly submit a memorandum in the very near future.

At the present time the physician is entitled to be paid for his attendance at a hearing if his attendance is required by the Industrial Board, the referee, the insurance carrier or the employer

COMMENTS Physicians are advised that the above rule applies to *ordinary* testimony of a physician who has treated the claimant under Chapter 258 of the Workmen's Compensation Law. This rule at the present time is interpreted to mean that a physician will be paid if his testimony is required by the referee, the insurance carrier, or employer or the Industrial Board

Claimants may at the present time obtain subpoenas requiring the physician to appear at the Department of Labor in order to testify. Unless the physician's presence is deemed necessary by the referee in such an event he will not be paid. It is this part of the rule which your Committee has asked the Industrial Council to reconsider

It is stated that certain physicians have encouraged claimants to subpoena them in order that they might obtain a fee rather than for the purpose of giving testimony of

value to the claimant. In the average case a verified copy of the physician's report is quite adequate for the determination of the case by the referee. Where a physician's personal testimony is really necessary even though subpoenaed by the claimant the referee now has the right to make an award if the doctor's testimony is deemed necessary. Physicians are urged to use caution in this matter. It is also advisable to point out here that the above fee of \$10 00 is for *ordinary* testimony and is not intended to cover *expert* testimony by a physician. In the latter event arrangements are usually made in advance for payment of the physician qualifying and testifying as an expert.

* * *

All physicians are respectfully requested to give particular attention to Rule No 23 (see page 27, Minimum Fee Schedule) of the Rules and Regulations promulgated by the Industrial Commissioner covering Chapters 258 and 930 of the Laws of 1935 amending the Workmen's Compensation Law

Rule No 23 reads as follows

Physicians authorized to treat workmen's compensation cases, when requested to supersede another physician *must*, before beginning treatment of such patient, make reasonable effort to communicate with the attending physician to ascertain the patient's condition. The superseding physician *must* also advise the attending physician of the name of the person who has requested him to assume care of the case and state the reason therefor. If the second physician cannot contact the attending physician, and the claimant's condition requires immediate treatment, the said physician should advise the doctor previously in attendance, within 48 hours, that he now has the patient in his care.

We have been in receipt of numerous complaints—from physicians, employers, and insurance carriers to the effect that this rule is being violated repeatedly

In many instances patients are shopping around from physician to physician to their own disadvantage. In a recent case one patient consulted at least half a dozen doctors within a short period of time and left a hospital where he was under the care of a reputable physician to consult other physicians. Although the Law gives a patient the right to change physicians it is not the intent of the law nor the purpose of any one concerned in the enforcement of the law to permit the changing of physicians without reasonable cause.

In order to avoid this practice the Commissioner and the Industrial Council promulgated the above Rule primarily in the interest of injured workmen and at the same time to protect other interested parties from the baneful effects of the abuse of the right of free choice

This practice can be easily checked if physicians will make an earnest effort before accepting a case that has been under the care of another physician to ascertain from

the patient his reason for changing physicians and to make an effort to get in touch with the superseded physician to determine his view of the case and relevant facts concerning the treatment of the case.

Physicians are urged to observe this procedure which in effect is in line with our conceptions of professional conduct and ethics

DAVID J. KALISKI, M.D., *Chairman*
FREDERIC E. ELLIOTT, M.D.
B. WALLACE HAMILTON, M.D.

Committee on Economics

From the committee comes the following announcement

The major economic problems in the provision of medical care are state wide issues and it seems imperative that all physicians of the state come to think about them in the same terms

Therefore, "field work" will constitute the chief effort of the Committee on Economics for the year. The members of the Committee will arrange regional meetings and will attend local County Medical Society meetings. In this way the Committee proposes to make a larger number of physicians of the state aware of the purposes and activities of the State Society Committee on Economics and, at the same time, will undertake to pick up the personal point of view of those who are think-

ing about these problems as they are related to local conditions

The Presidents of the neighboring County Medical Societies will be asked to attend conferences and each President will be urged to invite the chairman of his Society committee which handles economic problems to join the conference

Out of such direct personal contacts should arise a better service by the State Society Committee on Economics to the interests and concerns of the State Society membership at large.

One of the members of the Committee has prepared a brief suggesting a method of solving the problem of quackery which is submitted for the interest of the membership and for any comment desired

The Problem of Quackery

JOSEPH P. GAREN, M.D., *Olean*

The problem presented by the activities of quacks, charlatans, and the various types of cultists is one which at the present time is far from a satisfactory solution. The problem differs in different parts of the state. In one, the Christian Science healer seems the most prominent example, in other areas, chiropractors and naturopaths, and in still other regions prescribing druggists, "Indian doctors," and root, herb, and bark dispensers, daily give evidence of the gullibility of an appreciable proportion of the general population.

Very frequently an interested layman, and sometimes a physician also, will attempt to point out that it is the duty of the medical profession to take aggressive action to remedy the situation created by quacks and quackery. This viewpoint is one which is open to very serious objection. It is, naturally, the duty of the profession to "keep its own back yard clean," and this it does when it investigates and admonishes the unethical and unprofessional within its own ranks. *Quackery outside the profession is the public's back yard to be cleaned up and kept clean by the public.*

A good many physicians are beginning to

question the wisdom of leadership by the medical profession in the fight against the quack. In the mind of the layman the profession's motives are too readily impugned. There have been, for example, from time to time, prosecutions of chiropractors in this State. Practically always these prosecutions were initiated, directly or indirectly, by the medical profession. The number of convictions as a result of these prosecutions has been lamentably small. The defendant and his legal talent has generally succeeded in making the prosecution appear persecution, and the complaining medicos as individuals jealous of the chiropractor's financial success, or the affair has become an attack upon the organized medical profession, and especially the American Medical Association, which (for purposes of attack) is styled the Medical Trust.

Too, when such prosecutions come up, the busy antivaccinationists and antivivisectionists interest themselves very actively in the defense, because quacks as a rule are drugless healers, not using serums and vaccines, and not imperiling the lives and happiness of poor dumb animals in the production of such therapeutic agents

The task of combatting quackery is one which is best handled by a lay group. Such a group's motives could not be attacked by even the most suspicious attorney or publicist. It is work which a lay group can readily do. Just as a lay group, with medical technical advice, has gone a long way in the control of tuberculosis, so could a lay group go a long way in the control of quackery.

Such a lay group would certainly have the active support of many other organizations. For example, groups interested in cancer control would be inclined to cooperate, so would those devoted to the study and control of diabetes, the groups interested in the prevention of the nurturing of traumatic neuroses, and those engaged in preventive medicine and public health.

A tuberculosis and public health association very easily could, and quite properly should, have an active committee concentrating on the control of quackery. Or one or more of the large foundations, scanning the field of social welfare for service opportunities, could interest itself in the task. There is plenty of work to be done.

Information must be accumulated, laws studied, law enforcement officers interviewed and encouraged, and—most important of all—the public must be educated.

Such a task is one which would call forth the utmost energies of a devoted group of workers for years, and such a task is one which would very shortly thereafter return its cost many fold, in lives saved, and suffering prevented or minimized.

A good start would be a study, in a

city or county, of the total number of quacks, and a listing of the various genera. Data in regard to education, training, and cultural background, could be obtained and tabulated. Figures regarding the sums paid out by the public to quacks could be collected. Studies of the racial derivation, educational basis, and economic status of the groups most prone to patronize the quack could be made.

Are quacks more prevalent, relatively, in rural or urban areas? What genus of quack has the most appeal? From the standpoint of public health what type is most dangerous? From the viewpoint of economics what type is most harmful?

In a great measure it is the duty of the lay public health groups and the foundations to bear the brunt of the fight against the quack and his allies. Formerly such fighting as has been done by the lay groups has been done only as auxiliaries of the medical profession. In the past, when a legislative bill favoring the quack, or one throttling medical science through restrictions on experimentation, has appeared in the Legislature, the medical profession has been, perforce, in the van of the contest, and against the medical profession the sharpest and most vituperative shafts of the opposition have been launched. Vituperation has never yet caused the medical profession to swerve from a course it knows is right. In common parlance, the profession "can take it." But, in the interests of the greatest possible effectiveness in a most serious condition, the lay groups should take over the job.

Nursing Education and Nursing Service

Abstract of a symposium presented at a meeting of the Medical Society of the County of New York at the Academy of Medicine, New York City, May 25, 1936

In speaking on "*The Findings of the Committee on the Grading of Nursing Schools as a Basis for Cooperation*," Miss Mary M. Roberts, R.N., Editor of the *American Journal of Nursing*, stated that the Committee on the Grading of Nursing Schools had, in 1928, "pointed out that there was serious overproduction of poorly prepared nurses, many of whom should never have been admitted to the profession, and that nursing service was very poorly distributed." The exasperation which medicine often feels toward nursing is caused about equally by anxiety over poor nursing and over lack of any nursing. The Committee also pointed out "the economic insecurity of many private duty nurses, even in good times. It raised the question—but did not answer it—of supplementing nursing

service of a professional type with some sort of subsidiary service."

The incessant publicizing of the findings of the Grading Committee set people to thinking and to making studies of their own situations. This process is still going on. Perhaps the most important single result of the work of the Committee is that it taught nursing that facts are to social planning what structural steel is to the skyscraper. We have learned to search for facts and to be wary of opinion unless substantiated by facts.

Miss Roberts also quoted, from the same volume, the statement that

Surgeons are more apt to be happy about the quality of nursing service their patients receive than are the physicians in other specialties. Neurologists and psychiatrists are apt to

be extremely unhappy about it. Pediatricians comment on the lack of well-trained nurses for the care of children, and especially for the care of children with contagious diseases. Obstetricians testify that while there are many good obstetrical nurses, the supply is low compared with the demand. Most nurses apparently are not well prepared for obstetrical service, and those whose education along this line is lacking are apparently genuinely afraid to try it.

Physicians whose patients are almost uniformly hospital cases are apparently more apt to secure special nurses of these high types than are those physicians who most frequently rely upon nurses sent by commercial or central registries to home cases.

Faulty distribution, Miss Roberts thinks, is due in part to faulty preparation. The national nursing organizations have been making studies on the distribution of nursing service and every issue of the *American Journal of Nursing* for the past two years has carried data carefully compiled by the registries. These show

precisely the same thing that the doctors reported to the Grading Committee in 1928, *viz.*, that a high percentage of private duty nursing is hospital specializing, often of surgical patients and that it is difficult, often impossible, to secure nurses for pediatric, maternity, medical, communicable disease, and psychiatric patients. May this not be traced to the type of training the nurses have received? Physicians calling the registries are naturally exasperated when, knowing that there are nurses on call, they are told there is no one available for the particular need in question. One is sympathetic to that state of mind, but it is not difficult to understand the refusal of the nurse.

Take for example the registry that recently reported inability to fill calls for communicable disease cases. It is located in a city where there are two hospital schools. One gives no training in communicable diseases, the other provides only a very limited experience. Why does that community, through its physicians, expect communicable disease nursing service, when it has no real provision for preparing nurses to give that service? Couple that condition with a feeling of reasonable certainty on the part of the nurses that they would be called for the surgical cases they are really prepared to care for, and their psychology is quite understandable.

The medical profession is apt to blame the nursing profession for this condition. Nursing is almost powerless and will remain so until medicine demands a well-rounded preparation for more nurses.

On the basis of two studies of nursing schools, one in 1929, the other in 1932, the Grading Committee made the statement in its final report that "there are three sorts of nursing schools in this country—a few very good ones, a few which are very poor, and a good many which are neither good nor poor." In other words, most nursing schools are mediocre. Damning as that statement is nursing takes courage from the knowledge that the road it is travelling, difficult and uphill though it may be, is the same which has been travelled by all professions. It explains why urgent though the

need for services supplementary to nursing obviously is, the organized nursing profession is concentrating so much of its attention on the preparation for graduate nurse service.

The fundamental weakness of nursing schools is due to the fact that most schools are operated as departments of hospitals—a curious anomaly since, although hospitals require the services of doctors, dentists, nurses, dietitians, as well as various types of technicians and therapists, they attempt to control the education of no other group. More people—doctors, hospital administrators and boards of trustees—must think clearly about the needs of a nursing service, as distinguished from a nursing school.

Miss Roberts' paper was discussed by Dr. Nathan B. Van Etten, who was a member of the Grading Committee.

The average doctor, he averred, wants in practice much more from a nurse than the replies of doctors to the Grading Committee would indicate. He wants an earnest and smiling personality, he wants natural intelligence, supplemented by a comprehensive basic education, he wants technic that responds perfectly to every demand, he wants a tireless physique, he wants willingness to perform menial tasks with the same interest that she has in refined asepsis, he wants a paragon to work endless uncomplaining hours for small enough pay to leave something in the patient's purse to pay him also, he wants a superwoman, and he has given very little thought to the evolution of her development or of her career.

The statistics of the Grading Committee were elaborately and faithfully checked and cross checked by highly educated and highly interested persons. The results were convincing. Nursing education had a preceptorial basis. When the preceptor was good, valuable nurses were added to the profession. The rest of the scheme was chaotic. There were too many poorly educated nurses, too few well educated nurses, too few nurses with a well rounded education, too few with technical education for the specialties, too few who knew how to take care of children and obstetrical patients, or those suffering from contagious diseases, too few well educated public health nurses, too few good teachers in the training schools, too little teaching of any kind in the hospital training courses, too many hospitals maintaining nurse training schools merely because they needed the unpaid service of student nurses, too many nurses in the cities, too few in the rural districts, and there never was or had been a surplus of nurses of high quality.

The same thing may be said of the overcrowded professions of law and medicine, in which comparatively few have ever risen above mediocrity, either because of the quality of their education or because of personal ineptitude.

The library values of the work of the Committee on the Costs of Medical Care and of the Committee on the Grading of Nursing Schools are undoubtedly considerable, but while the Committee on the Costs of Medical Care mainly served to stimulate interest in the social problems of medical service, the Grading Committee aroused the nursing organizations and the

schools of nursing to constructive activity in raising standards and in actually producing better nurses

Physicians crowd the services of the municipal hospitals because they are *not* paid for their work. Their only ambition is to give the best possible service because of their scientific interest in these poor patients, and because of their desire for their own promotion in professional rank, and prestige, and distinction. Budgetary provision for medical care would be very likely to change all this because there would not be money enough to pay the number of physicians who would be needed for this service.

The best medical service that can be rendered is measurably faulty because of a budgetary failure to provide sufficient nurses. Hospital authorities want sufficient nurses but cannot get the money to pay them. Too few nurses means failure to properly execute the doctor's orders. The result is that the medical care of the poor people does not approach the ideal of the often quoted statement that the rich and the poor get the best of medical care while the middle class patient is neglected.

The sick, of all classes, get as much nursing as they are able to pay for. Unlike physicians, nurses, having no part-time paying private practice, are unable to give part of their time to free work.

Without the nurse and the doctor, hospitals are nothing but elemental shelter. Unless the proper balance between doctor and nurse is maintained the service is ineffective. Poor people get as much nursing as the tax payer provides. Middle class people buy as much nursing as they are able to pay for. Rich people buy as much nursing as they are willing to pay for.

The working life of the nurse is short. Twenty years is about her limit. After forty she is badly worn or occupies executive positions. Her financial return is so small that only by extreme care is she able to provide for the disabilities of age. Working only eight months in the year, on the average, budgeting for the future is most difficult.

An appreciation of the value of nursing by the medical profession is most important. All physicians should have some instruction in nursing in order to promote a better nursing prescription and better team work. All interns at the Morrisania Hospital are given a course in nursing, by demonstrations of all nursing procedures, conducted by a most efficient superintendent of nurses.

Medical education is far from a finished product. Basic education providing for the practical care of sick people amid their practical environments, developing sound general practitioners free from the smatterings of superficial teaching of specialties before they have learned their special aptitudes, would go far toward solving a demand for better medicine.

Nursing education by hospitals, which Miss Roberts calls anomalous should be postgraduate only, preceded by thorough teaching in basic sciences and their practical application to the care of the sick. And quite important some thought-provoking studies of history and social science. Miss Roberts says that nurses want reasonable hours and adequate income. Most nurses are citizens and must exercise their civic

prerogatives if they hope to attain these desires.

Nursing is recognized as a profession by the state, and the evolution of nursing will perhaps follow the experience of the medical profession. While generalized education in nursing is valuable to every one, the professional nurse must have a standardized education which must be paid for by somebody, perhaps, by state or private subsidy, or by tuition fees. The nurse must have hospital experience similar to medical internships. She must be licensed to practice and she must have regulated hours of service at standard fees or the usual fees charged in the community in which she lives. To give the best of service she must have sufficient rest and opportunity for refreshing postgraduate study. In other words the professional nurse must have all of the dignifying attributes and opportunities of other educated public servants. The medical profession must not only be sympathetic but must be actively cooperative in bringing nursing to its highest potentiality.

Following Dr. Van Etten, Miss Marion W. Sheahan, R.N., Director, Division of Public Health Nursing, State Department of Health, spoke on "*How Legislation Might Improve Conditions in Nursing*".

Miss Sheahan asserted that

the present New York Nurse Practice Act does not protect the public because it allows anyone to practice nursing who does not use the titles, registered, trained, certified, or graduate nurse, with no evidence of fitness to offer her services. The law does not protect the group of nurses it aims to protect because it permits anyone to compete with the registered nurse who chooses to offer her services as a nurse.

Legislation can help by requiring the license of all nurses who practice for hire, either as registered nurse or in a subsidiary group called "practical nurse" or some such title, by setting up educational standards for the subsidiary group by tightening up the nurse practice act by setting up requirements for approved schools of nursing for both groups.

In discussing Miss Sheahan's paper, Dr. Iago Galdston, Director, Medical Information Bureau, New York Academy of Medicine, said that

the (nursing) profession has suffered a "wild" growth. In 1900 there were but 11,892 trained nurses in the United States. By 1930 this number increased by 2,374 per cent, there being no fewer than 294,189. Nor has the growth abated, for in recent years the annual crop of trained nurses graduated has numbered no fewer than 25,000.

Dr. Galdston considered the Grading Committee's statement on the three types of nursing schools, as quoted by Miss Roberts, a very constrained statement, since

the typical school has only 43 students, half of all nursing schools are connected with hospitals having 75 patients or less, 29 per cent of the nurse faculty members have never finished

high school, and only 27 per cent of the instructors are college graduates.

But the most dismal picture is that of the economic phase of nursing. It has been estimated that a desirable ratio of nurse to population is one nurse to 455 of population. This estimate includes every kind of nurse, public health, hospital, school, and private duty. In New York State

the ratio of population to the trained nurse was, in 1930, 293 or only about two-thirds of the minimal desirable population ratio. This is had enough but at the beginning of this year there were in the state of New York 38,476 registered nurses, and 44,626 unregistered, practical, and other types of nurses. In other words, registered nurses face competition from an army of other unregistered practitioners of nursing numerically greater than themselves. The effects of this condition are chaotic and most destructive. Since employment days are few and far between, the registered nurse must command a comparatively high fee for the time she is on service. The public can hardly ever tell what type of service it is receiving and at what price. The condition tempts to all sorts of nefarious practices and machinations. In other words, anyone may practice nursing if only she doesn't assume certain titles. It is incumbent upon us to aid in making the first step to correct conditions in nursing and that step is legislative definition of nursing.

"How Nurses and Doctors Can Cooperate for Better Community Nursing" was the subject of the paper by Miss Lulu St. Clair, R.N., Executive Secretary, Joint Committee on Community Nursing Service. Miss St. Clair considers that the paramount question is

How can patients receive the nursing care needed?

So far there is no answer to the question of the amount of nursing service required to fill every community need. Studies have been made which show how much nursing service has been used but they are not based on the actual needs of the people. For instance, a community with a population of 100,000 might be expected to use 54,000 nursing days of 12 hours each, or 81,000 of 8 hours each, or the services of 148 to 220 nurses for hospital and home private duty, a community of such a size would use in a public health nursing program, including school nursing, 29 nurses, for visiting nurse service 19. The number of industrial nurses would depend upon the type of community. The number of nurses working in doctors' offices would vary, and the number of student nurses would depend upon many factors. These figures do not represent the actual need, for doctors know hundreds of patients for whom they would like to have some form of nursing care but who have no funds to supply this care.

The Joint Committee on Community Nursing Service (of the three national nursing organizations) has started to set up some tentative plans for its program with certain principles in mind. First, to find out what is being done in communities which are trying something different. Second, to study certain situations closely to try to find out where service may

be more efficiently distributed, where duplications may be eliminated, and where gaps may be filled in. Third, to help certain communities which desire help to analyze their own situations and to revamp their community service program. It is keenly felt by this committee that some experiment will have to be made, that is, some study or research to determine if possible, just how much private duty nursing is needed in homes and in hospitals, how many and what kind of nurses are needed to staff hospitals of certain kinds, how many are needed to furnish the various kinds of services required for sickness prevention programs as carried on by the public health agencies, and how much and what kinds of services are needed which might be given by the type of person called a subsidiary worker to care for patients where the nature of the illness does not require the services of skilled nurses.

Some communities have made attempts in a small way to meet the situation of the patient who cannot pay for nursing care. Since communities have assumed the responsibility for certain phases of human care, for human betterment, should this not be a community responsibility as well?

There are probably three points of attack which can be used in attempts to improve existing nursing services. First, the professional registry or nursing bureau, second, the merging of public health nursing agencies, and third the improvement of hospital service.

Supplying all types of nursing service through one professional bureau makes it more convenient for a physician to get the kind of service he needs. He has someone to appeal to when the service has not been satisfactory, with the assurance that an effort will be made to make satisfactory adjustments.

The second point of attack in the improvement of community nursing service is in the public health field. In one community there may be any number of agencies doing some form of public health work, each with its own set of medical standing orders, and its own medical advisory committee. Improvement here would consist in merging of agencies, with one advisory group who would make out uniform standing orders and set up uniform policies. The public health agencies themselves have pointed out this duplication of effort and are taking steps to bring about a more efficient program.

The last point of attack is the hospital. It stands in the position of both a producer and a consumer of nursing service. Studies have shown pretty accurately how much nursing service is needed to care for different types of hospital patients. One of the reasons why it is not available seems to be a lack of funds.

Low salaries, hard work, long hours, and poor working conditions are the logical result of an insufficient number of nurses which in turn may result in inferior care for the patients. Since business conditions have improved considerably, and in some cities hospital insurance plans have been introduced, it looks very hopeful that budgets for nursing services in hospitals will be increased to the extent that good nursing

care will obtain in every hospital. When sufficient data are available to show how many nurses are needed to take care of all the nursing needs in the community, then schools of nursing will be able to adjust their enrollments and build their curricula around the needs of the consuming public, and when financial conditions are improved hospitals will then be able to plan for adequate nursing service independently of schools of nursing. They can then offer their institutions as practice fields for nursing students as they are now offering them for medical students.

It should not be presumptuous to expect physicians to be interested in a problem which strikes so near the heart of their profession. The desire to give service draws men into the medical profession. The same urge from a little different angle draws women into the profession of nursing. While most of the problems are the result of economic and social upheavals, the fundamental reason for the existence of either profession is the desire to see sick people restored to health and to see illness prevented.

The Joint Committee on Community Nursing Service has a big job to do. It hopes to be of help to communities all over the country. It is counting on the cooperation of the physicians, the hospitals, the people in the communities, and the nurses themselves. It is sincerely hoped that there will be interest, understanding, and constructive criticism, all given with the

idea of being of assistance in planning nursing service. It is also hoped there may be available all the kinds of service required to fill every need and that some plan can be devised to insure adequate nursing care regardless of the ability to pay.

Miss Marguerite Wales, R N, Director, Henry Street Visiting Nurse Service, New York City, in discussing Miss St. Clair's paper, reiterated the problems facing nursing, particularly in relation to the distribution of nursing service. She stressed the need for the understanding and support of the medical profession in facing the problems of hospital nurses, who differ from public health nurses who have regular hours and vacations, and a steady income, making possible comfortable and healthful living conditions and necessary leisure. Miss Wales reviewed some of the services carried by the Henry Street Visiting Nurse Service and other public health nursing agencies and urged that small controlled studies of the home care of the sick be made, in which studies relationships between the medical and nursing professions should be considered, as well as the medical and nursing needs of the patient.

The Physicians' Home

"To create and maintain a home for aged and infirm physicians, their wives or widows"

This is the object of Physicians' Home, originally incorporated June 4, 1919, and reorganized April 15, 1936, with amendments to its Constitution and By-Laws to create a more effective organization. Officers elected at the recent meeting were: Dr. Charles Gordon Heyd, *president*, Dr. Warren Coleman, *first vice-president*, Dr. Silas F. Hallock, *second vice-president*, Dr. B. Wallace Hamilton, *treasurer*, and Dr. Joseph J. Eller, *secretary*.

Plans are under way to increase the existing permanent endowment which approximates \$130,000. Funds are quite inadequate to meet the requirements of the situation. Since 1919, the organization has been able to maintain from five to seven guests at various places, but there has always been a waiting list. When first organized the officers were: Dr. Robert T. Morris, *president*, Dr. Ralph Waldo, *vice-president*, Dr. Silas F. Hallock, *secretary*, Dr. Albert G. Weed, *treasurer*. In 1919 a general appeal for funds was made and the response was gratifying, but at no time have the resources been sufficient to establish and maintain a permanent home, and adequately meet the responsibilities of the profession toward its aged and infirm members.

Five types of membership in the organization are offered for enrollment:

Annual Member	\$100 or more
Sustaining Member	\$100 to \$1000
Life Member	\$1000 to \$5000
Patron	\$5000 to \$10,000
Benefactor	\$10,000 or more.

Checks should be made payable to the Treasurer, Physicians' Home, and mailed with application for membership to B. Wallace Hamilton, M.D., Treasurer, 52 East 66th Street, New York City.

At a meeting held April 15, 1936, the Board of Directors was increased from 14 to 33, and the following were elected:

Dr. Charles Gordon Heyd, New York. Dr. Floyd S. Winslow, Rochester. Mr. Max Binswanger, New York. Dr. Arthur W. Booth, Elmira. Dr. Warren Coleman, New York. Dr. Thomas H. Cunningham, Glens Falls. Dr. Adolph G. De Sanctis, New York. Dr. Max Einhorn, New York. Dr. Joseph Jordan Eller, New York. Dr. Thomas P. Farmer, Syracuse. Dr. Charles H. Goodrich, Brooklyn. Dr. Charles M. Gratz, New York. Dr. Silas F. Hallock, New York. Dr. B. Wallace Hamilton, New York. Dr. John Henderson, New York. Dr. A. Bern Hirsh, New York. Dr. Peter Irving, New York. Dr. David J. Kaliski, New York. Dr. George W. Kosmak, New York. Dr. Samuel W. Lambert, New York. Dr. Robert T. Morris, Stamford, Conn. Dr. Fred H. Albee, New York. Dr. Edward C. Podvin, New York. Dr. William H. Ross, Brentwood, N. Y. Dr. George Dow

Scott, New York Dr Arthur L. Sherman, New York. Dr Andrew Sloan, Utica. Dr Frederic E. Sondern, New York. Dr Edward P. Swift, New York Dr Terry M. Townsend, New York. Dr Harry Trick, Buffalo Dr Louis A. Van Kleeck, Manhasset, N. Y. Mr J. Miller Walker, New York

A Board of Trustees was elected as follows

Dr Samuel W. Lambert, for one year Dr Warren Coleman, for two years Dr David J. Kaliski, for three years Mr Max Binswanger, for four years Mr J. Miller Walker, for five years

THE LAKE KEUKA MEDICAL AND SURGICAL ASSOCIATION

The first annual meeting of the Lake Keuka Medical and Surgical Association was held at Grove Springs Hotel, on Lake Keuka, New York, on August 14 and 15, 1900

It was the outgrowth of meetings originally held on Lake Keuka by the Steuben County Medical Society, later joined by five other counties—Ontario, Chemung, Yates, Seneca, and Schuyler. At the second meeting of this group, the above organization was effected, which was to be known as "The Lake Keuka Medical and Surgical Association." This association was to hold its annual meetings on Lake Keuka, one of the most beautiful lakes of the Finger Lakes Region, which region has been called "The Switzerland of America" by many writers.

The officers elected at this first meeting were Dr Henry Flood, Elmira, President, Dr Macev, Willard, Vice-President, and Dr Smith, Avoca, Secretary-Treasurer.

About seventy physicians, representing five counties, were present, and great interest and enthusiasm were manifested throughout the two-day session. The program at this meeting consisted of speakers who were prominent in their profession in the five counties comprising the association at that time.

In those days, moonlight rides on the lake were participated in by the members of the Association, and trips were arranged to the wine cellars located on Lake Keuka.

The association has gradually grown taking in more and more counties in central and western New York State, until at present there are twenty-two Counties in the Organization, which are Allegany, Chemung, Cortland, Cayuga, Erie, Genesee, Livingston, Madison, Monroe, Niagara, Onondaga, Ontario, Oneida, Orleans, Schuyler, Seneca, Steuben, Tioga, Tompkins, Wayne, Wyoming, and Yates. This year, the Association has taken in the Counties of Northern Pennsylvania bordering on New York State.

Today the association is known throughout the United States, and particularly in the Eastern part of the Country, as one of the greatest scientific outing meetings in America. The standard of its programs has always been of the highest. The officers of

the Association have always tried to secure speakers and subjects which would appeal mostly to the general practitioner. They have occasionally deviated from the hard and fast rule of a purely medical program, and have secured, as they did this year, speakers who had a message of interest to the profession, such as a speaker from the Bureau of Investigation and Department of Justice, and L. A. Lawson, Professor of International Relations of Hobart College, Geneva, New York, who gave a very interesting talk on "A Twentieth Century Policy for America." In the past, the association has had United States Senators, and many other men of National reputation, who are not in the medical profession, on its program. There has always been great interest manifested in these meetings, hence the reason that the association has grown and gradually taken in more Counties.

Dr E. Carlton Foster, of Penn Yan, was Secretary-Treasurer of the organization from 1912 to 1922, and during this time was instrumental in securing speakers of National reputation in the profession. He was elected President in 1922, and the office of Secretary-Treasurer has since been filled by Dr John A. Hatch of Penn Yan.

For the past several years, various forms of entertainment have been planned for the members and guests, such as free airplane rides, wrestling and boxing contests in the evenings, speed boat and sailboat races, free motorboat rides on the Lake, picnics, banquets, and many other forms of entertainment. This meeting offers a splendid opportunity to combine a profitable scientific program with a vacation and recreation for the members and their families. No better place is to be found for a summer meeting than on the shores of the beautiful Lake Keuka.

The attendance of physicians at these meetings has numbered from 150 to 265, and with their families and guests, the total attendance has reached 400.

Since the origin of this Association, meetings have been held at various points on Lake Keuka, and for twelve or fourteen years prior to this year, they have been held at the Keuka Hotel. This year, the meeting was held at Red Jacket Park, Lake Keuka, New York on July 16 and 17 and the fol-

lowing Officers were elected for the ensuing year President, Dr Donald Guthrie, Sayre, Pennsylvania, Vice-President, Dr John J Finigan, Rochester, Secretary-Treasurer, Dr John A. Hatch, Penn Yan, and Assistant Secretary-Treasurer, Dr E Carlton Foster, Penn Yan

The scientific program was very interesting. At the opening session, after a short address by Dr Floyd S Winslow, the President on "Trends in the Progress of Medicine" papers were read by Karl M Wilson, M D, F A C S, Chief Obst. and Gyn, Strong Memorial Hospital, Rochester, N Y, "Some Points in Connection with Ovarian Hormone Therapy," and by Charles C Higgins, M D, F A C S, Cleveland Clinic, Cleveland, Ohio, "Recent Experimental Observations Dealing with the Production and Solution of Urinary Calculi and the Clinical Management of Patients"

At the afternoon session Mr Doherty,

Bureau of Investigation, Department of Justice spoke on "The Work and Functions of the Federal Bureau of Investigation" Papers were read by Stuart W Harrington, M D, F A C S, Mayo Clinic Rochester, Minn "The Surgical Treatment of Diaphragmatic Hernia," and Edgar Burke, M D, F A C S, Jersey City Medical Center, Jersey City, N J "Some Aspects of Traumatic Surgery of the Abdomen"

On July 17 Mr L A Lawson, Professor of International Relations, Hobart College, Geneva, spoke on the subject—"A Twentieth Century Policy for America" Herman O Mosenthal, M D, Professor of Medicine, New York Post-Graduate Medical School and Hospital read a paper on "Diagnosis, Symptoms, and Treatment of Chronic Diffuse Glomerular Nephritis," and George Crile, M D, F A C S, Cleveland Clinic, Cleveland, Ohio on "Mechanism and Surgical Treatment of Essential Hypertension"

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested

Chautauqua County

THE LANESTOWN MEDICAL SOCIETY elected Dr George M Shearer president at the annual meeting on June 25 at the Moon Brook Country club. Dr F J McCulla was elected vice president, and Dr Homer M Wellman, secretary-treasurer

A kickers' handicap golf tournament was held preceding the dinner. Prizes in Group 1 went to Dr W Gifford Hayward, Dr Henry G Morris and Dr Robert Northrup. Prizes in Group 2 went to Dr George F Caccamise, Dr Harold A Blaisdell, Dr Clyde L Wilson, and Dr James M Steele

The fall tournament will be held in September, the combined scores in the June and September events to decide the award of the society trophy. Dr Ernest J Kelley, Jr, is the present trophy holder

Chemung County

THE CHEMUNG COUNTY Medical Society held a regular business meeting at the Arnot-Ogden Hospital library on July 8. Reports of committees were received

Erie County

DR JOHN D BONNAR 84, widely-known physician and surgeon, died on June 24 at his home, in Buffalo, following an illness of four months

Active for years in the affairs of the Erie

County Medical society and the New York State Medical society, Dr Bonnar recently was elected to honorary membership in each of the societies

He established his office in Buffalo 56 years ago

He served as chairman of the county society's committee co-operating in the construction of the General hospital and in a similar capacity on the committee of the Academy of Medicine of Buffalo co-operating in the building of the Museum of Natural Sciences

Greene County

THE SUMMER MEETING of the Greene County Medical Society was held Tuesday evening, July 14, at the Ledge End Inn at Haines Falls. Dr Chester O Davison of Poughkeepsie was the guest speaker

Kings County

ALTHOUGH the maternity death rate in Brooklyn is the lowest in the United States, the Kings County Medical Society is determined that it will not stop its fight against mortality

Instead it has intensified its move to educate prospective mothers and to keep before members of the profession the perils which beset mothers and babies

The Society is sending to all physicians

in Brooklyn, even those not members of it, its pamphlet entitled "Minimum Standard for Prenatal Care."

The Maternity Center of the Visiting Nurse Association is helping the doctors in their drive to keep maternity deaths down

THE BROOKLYN EAGLE has been publishing a series of interesting articles on "Miracles in Medicine," by Evelyn Marsh, telling the stories of lives saved by doctors in Brooklyn hospitals. One is about the removal of a brain tumor, another about the cure of *icterus neonatorum gravis* by injection of the mother's serum, and so on. The general effect of the articles tends to stimulate confidence in the minds of those who are fearful of hospitals and surgery.

Nassau County

THE MEDICAL BOARD and Board of Directors of the Long Beach Hospital have extended courtesy privileges to all physicians members in good standing of the Medical Society of Nassau County, and to all surgeons and physicians on the attending staff of a grade A hospital, regardless of location.

It not only means that local residents who have had family physicians for years, while living in other localities, can have these same doctors treat them at the local hospital, if the physician or surgeon has the proper credentials, but that accredited physicians or surgeons who are not on the staff of the Long Beach Hospital may bring their patients to the Long Beach Hospital and have the same courtesies as the local medical men.

New York County

CORNERSTONES have been laid for three new health center buildings as part of a program that will eventually include thirty district centers. WPA grants and loans amounting to \$1,900,963 have made possible the construction of eight buildings immediately. Those for which cornerstones have been placed recently are in East Harlem, Chelsea Park and the Williamsburgh-Greenpoint district of Brooklyn. Construction has been begun on others in Central Harlem and the Red Hook-Gowanus section of Brooklyn, it is reported.

Mayor La Guardia said recently "Our new health centers in Harlem have had their last piles driven. I have appointed Dr. John West, a Negro physician distinguished in public-health work, to supervise these centers. Dr. West has passed a civil service examination qualifying him for the appointment."

The board of aldermen voted June 17 to

grant the eight hour day to employees in city hospitals. The change will add about \$1,000,000 annually to the budget of the department, it was said, but in the opinion of those supporting the bill the expense is justified because of better service to patients and reduced turnover in the hospitals. The bill's provisions may be suspended in times of emergency, it is provided. It does not affect administrative officials, medical and lay superintendents, physicians, internes, pathologists, roentgenologists, superintendents of nurses and ambulance drivers. Alderman James A. Burke, who sponsored the city law, introduced into the legislature last year a similar law affecting state hospitals, which went into effect July 1.

DR. NATALE COLOSI, professor of bacteriology at Wagner College, has become general director of the Parkway Hospital which overlooks Central Park North at 123 West 110th street, Manhattan.

At 31, he is the youngest hospital head in the City of New York.

Professor Colosi holds the degrees of bachelor of science, master of science in bacteriology and pathology, and doctor of philosophy. He has been connected with Parkway Hospital two years as clinical pathologist and director of the laboratory.

He has also been instructor of bacteriology at New York University Medical School, bacteriologist at Manhattan General Hospital and Columbus Hospital Extension, a writer for scientific and medical journals and official collaborator of biological abstracts published by the University of Pennsylvania.

Niagara County

A PLAN is under consideration to set up a Niagara County Health Department to replace the city and town health bodies. A survey is contemplated to gather the facts before any action is taken.

Oneida County

DETAILS OF THE fraudulent claims racket were explained to 265 physicians and lawyers at the Yahnundasis Golf Club on June 17 by E. A. Height, superintendent of the Employers' Group, and president of the Syracuse Claim Association.

The occasion was a joint meeting of the Utica Academy of Medicine and the Oneida County Bar Association. Other speakers included Dr. John F. Kelley, John Train, president of the Utica Mutual Insurance Company, Attorney Arthur J. Foley, Paul McNamara, president of the Bar Association, and Supreme Court Justice Edward N. Smith.

for competition in golf and softball between the two professions. The honors were equally divided, the physicians winning the golf award while the lawyers defeated the medical advisors 24-7 in softball.

Onondaga County

THE ONONDAGA HEALTH ASSOCIATION has announced the speakers in a series of weekly health talks to be given at 2 30 o'clock each Thursday afternoon.

The August and September programs will include talks by Dr. M. S. Dooley, Dr. Philip Rosenberg, Dr. L. M. Hickernell, Dr. Earl E. Mack, President of the Syracuse Medical Society, and Supt. G. Carl Alverson and Miss Margaret Phelps of the Board of Education.

CARRYING OUT a deathbed request, the ashes of Dr. Whiting Sweeting Worden, pioneer medical missionary and native of Syracuse, were returned on July 2 from Yokohama, Japan, and placed in a crypt of a monument in Oakwood cemetery beside those of his wife, Mrs. Hattie May Worden. Dr. Worden died in 1933 after serving for 50 years among the Japanese people. His wife died 20 years ago in Honolulu while returning to Yokohama from this country. E. T. Frazar of Yokohama, deputy supreme council of the Masonic order in Japan, brought the ashes to Syracuse.

Dr. Worden had been associated with the Japanese government and had been medical officer of the port of Yokohama. He was one of the leaders in the rehabilitation work immediately after the earthquake of September, 1923, in which the city of Tokyo was destroyed.

Ontario County

THE THIRD QUARTERLY meeting of the Ontario County Medical Society was held July 14th, at the Geneva Country Club. The business session was at 5 o'clock, dinner at 6 30, scientific discussion at 7 45. Dr. Ellery G. Allen of Syracuse was the guest speaker. His subject was "Recent Advances in Haematology with Especial Reference to Diagnosis and Therapy."

Suffolk County

THE QUARTERLY MEETING of the Suffolk County Medical Society was held at the Wyandotte Hotel at Bellport on July 22. After the business session and luncheon, the members listened to an address on Obstetrics by Harvey B. Matthews, M.D., F.A.C.S., of the Long Island College Hospital Medical School, Brooklyn.

The wives of members were invited to meet for the purpose of organizing a Woman's Auxiliary. Mrs. John L. Bauer, President, Woman's Auxiliary Medical Society, State of New York, was present to explain the functions and method of organization.

Ulster County

THE ULSTER COUNTY Medical Society held its annual banquet at Broglio's Inn, West Park, on July 1. Among prominent guests outside the medical profession were Mayor Heiselman, Corporation Counsel John M. Cashin and District Attorney Cleon B. Murray, of Kingston. An honored guest of the doctors also was Dr. Frank Laidlaw, State District Health Officer of Middletown. Dr. Edwin C. Fassett, president of the society, was toastmaster.

Westchester County

THE WHITE PLAINS Medical Society held golf tournaments on June 17 at the Westchester Hills Golf Club and on July 22 at the Carmal Country Club, followed by an outdoor beefsteak party. Coming matches will be held in August at Whipperwill Golf Club with a dinner following at Max's, and in September at Gedney Farm Golf Club, followed by the Annual Dinner of the Society. The entertainment committee is composed of Dr. Kingery, Dr. R. I. Heffering and Dr. R. W. Moriarty.

ANNOUNCEMENT IS MADE by the Executive Committee of the Board of Governors of the White Plains Hospital of the inauguration of a new service for the treatment of malignant disease.

This new service to the patients of the community is made possible through the generosity of an anonymous donor and the kind co-operation of the Memorial Hospital of New York City, the Staff of which is to act in an advisory and consultant capacity. In this connection, the appointment of three consultants to the Staff of the White Plains Hospital is announced. These men are all prominent in their particular fields of cancer diagnosis and treatment.

A Tumor Clinic will be established and arrangements are already under way for the installation of the latest equipment in radiotherapy treatment machines. The equipment has been purchased under the supervision of Memorial Hospital and it is planned that installation will be completed so that the Tumor Clinic for diagnosis and treatment of malignant disease may be opened early in the Fall.

Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

Malpractice—Death of Alcoholic Under Anesthesia

The legal responsibility of a physician who has had the misfortune of having a patient die from the administration of an anesthetic is the subject of a case which came before the highest court of one of the Western states, and which was decided by that court favorably to the defendant doctor.

The patient, L., in the case was a strong healthy man nearly six feet tall, weighing in the neighborhood of 200 pounds, who while at work in a mine sustained a fracture of both bones of the right forearm. He was taken to a hospital and came under the charge of Dr. S. who promptly applied temporary bandages and dressings, and obtained x-rays. Dr. S. determined from the interpretation of x-rays that the proper procedure was to permit swelling to recede, and the soreness to disappear for three or four weeks, and then to perform an open surgical operation upon the arm for the purpose of getting the best possible result. In his opinion, without the proposed operation, the result would be a functionally useless arm. L. returned to the hospital from time to time for change of dressings and at the end of almost four weeks, Dr. S. observed that L. was indulging in intoxicating liquors to excess. Dr. S. warned him against the practice, and the patient promised to give up his drinking, but he failed to do so.

When an appointment was made for the proposed operation, L. showed up badly intoxicated, and was sent home with a warning to desist from his excesses. A new time was set for the operation, and the same thing happened on that occasion. A third time for the operation was set and the patient was required to appear at the hospital a day ahead of time, which he did. Dr. S. saw him then, found that he again showed the effects of drinking, but that he was more sober than on the earlier occasions. While the patient remained in the hospital overnight, the doctor "got him in as good condition as he could under the circumstances," and the next morning he was taken to the operating room and put under a general anesthetic preparatory to Dr. S.'s proposed operation. It was presently found that the patient did not progress favorably, and attempts were made

to revive him which failed. The patient had convulsions, described by the doctors as having some of the characteristics of an alcoholic fit, and he died in less than half an hour.

The patient's widow brought an action against the doctor in which she charged that he was responsible for the death of L. because of negligence in causing an anesthetic to be administered when the patient was in an unfit condition.

Upon the trial of the action the testimony showed the fact situation to be substantially as set forth above. The widow also gave evidence that Dr. S. after the death, had told her that it had been caused not by the original injuries but by the shock of an anesthetic administered while L. was in an intoxicated condition, and suffering from acute alcoholism. Dr. S. when asked why the patient had not been kept longer in the hospital before operating testified to the effect that he had been in twice previously for the operation, but had gone home on each occasion, and that the stay overnight in the hospital improved his condition greatly.

It was conceded that the proposed operation was necessary to prevent the arm from being useless, and that the operation required an anesthetic of the type given. There was evidence that L.'s drinking would weaken his heart action, and generally make it more dangerous for him to undergo an anesthetic, but there was also evidence that there is always a risk of death from anesthesia regardless of the use of intoxicants of one chance of death in from 2000 to 5000 cases.

The trial resulted in a judgment in favor of the doctor, and the plaintiff appealed but the Appellate Court affirmed the judgment, saying in the course of the opinion:

It is the contention of the appellants that they met the requirements of the rule fully by introducing the admissions made by Dr. S. to the effect that he knew that L.'s intemperance had reduced his vitality and greatly increased the danger incident to the administration of an anesthetic and that he knew it was dangerous to cause the anesthetic to be administered to L. on July 18 but because of his knowledge of the patient's physical condition he felt justified in proceeding at that time. That this does not amount to an opinion

or admission that the treatment—the administration of the anesthetic under the circumstances—was not in conformity to the requirements of good surgery, or indicated a want of ordinary care, skill, ability or diligence is so obvious as to require no comment. No presumption of negligence arises from the fact that it was dangerous to administer the anesthetic to L on July 18, for the evidence discloses that the element of danger is present in every instance where a patient is anesthetized.

The gravamen of this case is negligence, and negligence cannot be inferred from the fact alone that the patient died. The maxim of *res ipsa loquitur* has no application to a case of this character. Negligence is not to be presumed, it must be proved, and the plaintiffs are required to assume the burden of proving the negligence charged and that L's death resulted proximately from such negligence. From the very nature of the case, each of these ultimate facts require for its proof the testimony of one qualified to give an expert opinion and in the absence of such testimony the case failed.

It is not difficult to understand why expert testimony was not introduced. The subject matter does not admit of it. The case made is one wherein the question whether the operation should have been undertaken on July 18 was addressed exclusively to the sound judgment of the surgeon in charge. In the absence of evidence to the contrary, we must assume that Dr S possessed the requisite learning, skill, and ability. There is no charge made that he was remiss in failing to collect all the data essential to an intelligent judgment. On the contrary, it appears that he knew the patient's history during the preceding six weeks at least, that he knew L was a strong robust man of middle age, that he knew the fact, extent, and effect of L's intemperance and for what length of time he had refrained from the use of alcoholic intoxicants, that he knew the character and extent of L's injury and the effect which it had upon his system and with all this knowledge, available to draw upon, he determined that the patient could withstand the shock of the anesthetic on the morning of July 18. There is nothing in the record to suggest an impeachment of his good faith, on the contrary, the evidence leads to but one conclusion. That Dr S exercised a bona fide judgment and if, under the circumstances, an error was committed—and the evidence does not warrant such an assumption—it was merely an error of judgment for which he cannot be held responsible in damages.

The Court also said, with reference to the contention that Dr S should have kept the patient in the hospital for a longer time before the operation, the following

Certainly there is not any presumption that a physician has authority to detain his patient

against the patient's will, any more than that he may operate upon the patient without the patient's consent. Whether the operation could have been performed as well at a later date is left to conjecture. If the operation had been postponed longer, and serious results had followed to L's arm, Dr S might have been called upon to respond in damages for his negligence in failing to operate at the proper time.

Death From Gangrene Following Infection of Toe

A doctor engaged in general practice was called to the home of a woman about seventy years of age to treat her with respect to complaints of an infected great toe. The doctor administered a local anesthetic, ethyl chloride, incised the infected spot, and drained a small quantity of pus. He applied a gauze bandage and the patient seemed to be in a satisfactory condition. He called at the patient's home on the two succeeding days and found on each occasion that the patient contrary to his instructions had taken his dressings off and applied unsanitary ones. Three days after the incision, he found the foot considerably swollen and indications of developing gangrene. On that day, however, the doctor was informed that another physician was taking over the care of the patient and he never saw the patient again.

He later learned that, about a week after he last saw the patient, she died from gangrene of the leg.

More than two years after the death of the patient, an action was brought against the doctor by the administrator of the patient to recover damages on various theories of responsibility including the usual charge that the doctor had been negligent in treating the patient and that such negligence had been the cause of the patient's death. The complaint also contained theories that the doctor had breached his contract of employment in treating the patient. Upon a preliminary application, all of the causes of action were dismissed by the court as barred by the two year statute of limitations except the cause of action based upon the claimed breach of contract.

The case was reached for trial in its regular order but the plaintiff's attorney failed to appear for the trial of the case and the court, therefore, granted judgment in favor of the defendant by reason of the plaintiff's default.

Across the Desk

The Great Mixed-Blood Puzzle

TOUCHING SCENES loom before the imagination as we try to vision the workings of the new regulations in Germany which define just when a doctor is Jewish and when he is Aryan. Little Otto, let us say, has a terrible pain in his tummy, and his father, distracted with anxiety, summons Dr X, the most skillful surgeon in the town. When he comes, he is sharply questioned "Were any of your grandparents Jews?" "Yes, three of them." "Then you mustn't operate on little Otto, he is Aryan!"

So Dr Y is called. He has only two Jewish grandparents, permissible under the new rules, and he finds that Otto has an inflamed appendix, which ought to come out at once. As he is about to operate, however, the father discovers to his horror that Dr Y has been known to enter the local synagogue. That classes him as Jewish, and he is handed his hat.

Next a hurry call is put in for Dr Z and he comes on the run. Two of his grandparents were Aryan, and, far from attending a synagogue, he is a violent atheist and is against all religion. Splendid! Just the man to handle an Aryan appendix! Out it comes in the nick of time, but an awful thought smites the brain of Otto's mother "Dr Z is your wife a blonde or a brunette?" "A brunette." "Good heavens! How many Jewish and how many Aryan ancestors did she have?" Dr Z carries the figures in a little handy book of logarithms, and with the aid of a slide rule the percentage is worked out to seven decimals and his wife is found to be Aryan by an eyelash. What a relief!

If Dr Z's wife had proved Jewish, that would have put him in the Jewish category, and presumably the Aryan appendix would have had to be put back.

The Milk in the Coconut

Everyone of course admires the marvelous German scientific mind, which never hesitates to grapple with the most complex problems. It has tackled the intricate puzzle of Jewish and Aryan blood, and has emerged with a set of regulations that are, to say the least, intriguing, as reported from Berlin to the *A.M.A. Journal*. A doctor with two Jewish grandparents is listed as Jewish if he is a member of the Jewish religious community or has a Jewish wife. Otherwise he is non-Jewish. If Jewish, then there is a long list of regulations telling things that he can and cannot do. It would be interesting to learn why the doctors on one side of this hair-line are competent to treat the sick while those on the other side are not.

Impartial observers of the German and Jewish peoples must admit that a doctor inheriting the best qualities of both would be a superman, while one inheriting the worst traits would, as they say, be "something else again." What seems likely is that the earlier sweeping rules against the Jews in Germany have proved unworkable. The available Aryan physicians may not have been equal to the increased demand upon them. So the bars are being lowered a bit by a revised count of wives, synagogues, and grandparents. A little later we may see them let down further.

A False Ray of Dawn

OLD-FASHIONED PEOPLE HERE were shocked some years ago when Soviet Russia proclaimed that any woman could have abortion performed free at a government hospital. Our "advanced" minds of course hailed the Soviet free-abortion plan as part of the dawn of the world's new day. Well, after a thorough trial, the new-dealers of Moscow have decided that this particular ray of the dawn was an error, and they are out with a proposed law prohibiting abortion, which is being discussed, as we read in the *Moscow News*, "throughout the

width and breadth (sic) of the Soviet Union, in factories and mills, on collective and state farms, in offices and educational institutions." No false modesty limits the debate, either. "An ovation," we are informed, greeted Mrs V V Likhonos, a woman worker, when she leaped to her feet at a factory meeting, and "announced her intention of withdrawing her application in the clinic for an abortion." The Moscow paper prints this as an indication of how the people feel about it.

To make it up to the mothers and to

reward them for their pain and sacrifice, the proposed law will increase the number of maternity homes and nurseries, give the employed mother two months vacation with pay before the happy event, and two after, and allow her 10 rubles a month for nursing her child. The domestic ruble is not the same as the ruble of foreign trade, and it is difficult or impossible to state its value in our money. The ruble of foreign trade is worth about 87 cents. To encourage large families, a mother of seven children will receive 2,000 (domestic) rubles a year for five years for each subsequent child from the day of its birth, and a mother of 11 will get a lump sum of 5,000 rubles on the birth of each subsequent child and an annual grant of 3,000 rubles for a period of four years following the child's first birthday.

Rosy outlook for "Infant Industry"

Whatever the value of the ruble, it looks

like prosperity for this particular "infant industry" in the Soviet land. We must remember that Soviet law sees no difference between wedded and unwedded mothers, so both will reap the new benefits alike. It must also be kept in mind that the new scheme is not yet enacted, and may be modified.

This back-tracking on one of the main "reforms" of the Soviet millennium suggests that it may be a good idea for the shouters who urge us to paint everything here red to wait a little and see what works and what doesn't in the dreamland of Lenin. If all immigration and emigration bars were let down, it is just possible that the rush would head in this direction, and our red enthusiasts might find themselves lonely on the boats going the other way. There is nothing to prevent them, in fact, from going now, if they are so sure heaven is located in Moscow.

Are We Cursed with too much Science?

IT SEEMS PRESUMPTUOUS to disagree with so eminent a scientist as Sir Oliver Lodge, but when he declares his belief that science should call a halt on new discoveries because so many of them are put to evil uses, he disregards that common-sense which is at the basis of all science. "There is a surfeit of science," he exclaimed recently. "The world is sick and tired of scientific achievements. Too many of our endeavors, those things which I and others have struggled to bring about, have been so grossly abused. The time has come for stock-taking. Science should consider what it has on hand and concentrate on that rather than on adding to the knowledge of a world already ill with indigestion. Too much knowledge has already taken the wrong path."

Two errors in this sort of logic show up at once. They "leap to the eye," as the English say. The first is that men of evil mind will go on inventing anyway, and no one can stop them, and the second is that if we do not want the evil inventions to destroy us, we must go ahead, "all-out," with counter-inventions to overcome them.

Here Is an Example

We are so far from Europe that we are apt to pay little attention to the war-rumors over there, but an English paper that arrived here a few days ago had an article

revealing that the British government is printing and distributing 10,000,000 copies of a book of instructions, one for every home, telling families to prepare now for a colossal poison-gas air-raid which may be the unheralded opening move of the next war.

One room in every home is to be prepared now for immediate use as a refuge by the family when the raid signal gives the alarm. Preparations must be at hand to make doors, windows, fireplaces, even key-holes, airtight. Thirty million gas-masks are now being manufactured to be stored at handy caches in every city, town, hamlet. School children are being drilled in their use. That looks like business, doesn't it?

Awake or Asleep?

But we are so far away! Are we? True, we were beyond the reach of air-raids in the last war, but that was before the days of airplane-carriers. Tomorrow, if a foe gained command of the sea, New York would be as exposed as London, Buffalo, Rochester, and Syracuse would be as exposed as Paris or Liverpool.

Instead of halting, isn't it time for science to wake up? Our young men are receiving instruction at this moment in military training camps, our factories have machinery stored in basements and lofts that can be set up on short notice to produce munitions

and military supplies. Are our hospitals and medical men prepared, not merely to treat the victims of poison gas, but to show people how to protect themselves against it? How many could make an effective gas-mask, or know what it should contain?

May heaven grant that we never have another war, but if come it must, then may heaven, or our own good sense, provide

that we shall not be so pitifully unready as we were last time.

Masochists are folks who like to suffer pain, and sadists are people who like to inflict pain. A combination asylum ought to make them both happy, and relieve the rest of us.

Books

Books for review should be sent directly to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

RECEIVED

A Study of Masturbation and the Psycho-sexual Life By John F. W. Meagher, M.D. Third edition re-edited and revised by Smith Ely Jelliffe, M.D. Duodecimo of 149 pages. Baltimore, William Wood & Company 1936. Cloth, \$2.00.

Time of Ovulation in Women. A Study of the Fertile Period in the Menstrual Cycle By Carl G. Hartman. Octavo of 226 pages, illustrated. Baltimore, Williams & Wilkins Company 1936. Cloth, \$3.00.

The Early Diagnosis of Malignant Disease For the Use of General Practitioners By Malcolm Donaldson, F.R.C.S., Stanford Cade, F.R.C.S., William D. Harmer, F.R.C.S., R. Ogier Ward, F.R.C.S. and Arthur T. Edwards, M.D. Octavo of 168 pages. New York, Oxford University Press 1936. Cloth, \$3.00.

Evans' Recent Advances in Physiology Revised by W. H. Newton, M.D. Fifth edition. Octavo of 500 pages, illustrated. Philadelphia, P. Blakiston's Son & Co., Inc. 1936. Cloth, \$5.00.

Medical History of Contraception By Norman E. Himes, Ph.D. Octavo of 521 pages. Baltimore, Williams & Wilkins Company 1936. Cloth, \$7.00.

American Martyrs to Science Through the Roentgen Rays By Percy Brown, M.D. Octavo of 276 pages, illustrated. Springfield, Charles C. Thomas, 1936. Cloth, \$3.50.

New Faces—New Futures. Rebuilding Character with Plastic Surgery By Maxwell Maltz, M.D. Octavo of 315 pages, illustrated. New York, Richard R. Smith 1936. Cloth, \$3.00.

Royat Treatment in Cardiovascular Disease By Pierre N. Deschamps, M.D. Octavo of 108 pages. Baltimore, William Wood & Company 1935. Cloth, \$2.00.

Surgical Emergencies in Children By Harold C. Edwards, M.S. Octavo of 274 pages, illustrated. Baltimore, William Wood & Company 1936. Cloth, \$4.50.

Handbook of Surgery By Eric C. Mekie, M.B. Duodecimo of 699 pages, illustrated. Baltimore, William Wood & Company 1936. Cloth, \$4.50.

The Adrenals By Arthur Grollman, M.D. Octavo of 410 pages, illustrated. Baltimore, The Williams & Wilkins Company 1936. Cloth, \$5.00.

Emergency Surgery By Hamilton Bailey, F.R.C.S. Second edition. Octavo of 842 pages, illustrated. Baltimore, William Wood and Company 1936. Cloth, \$14.00.

The Harvey Lectures Delivered under the auspices of The Harvey Society of New York, 1934-1935. Series XXX. Octavo of 270 pages, illustrated. Baltimore, The Williams & Wilkins Company 1936. Cloth, \$4.00.

REVIEWS

Post-Graduate Surgery Edited by Rodney Maingot, F.R.C.S. Volume 1. Quarto of 1742 pages with 846 illustrations. New York, D. Appleton-Century Company 1936. Set of three volumes, cloth, \$45.00.

In the production of Post-Graduate Surgery, an attempt has been made to cover as far as possible the whole field of surgery in a practical manner. A certain basic knowledge of surgery has been assumed and opportunity has thus been afforded to devote more space to a description of special methods of investigation, to an account of recent and approved advances in surgical treatment and to details regarding the management of cases before and after operation.

The work has been written especially for post-graduates engaged in the practice of surgery and for senior officers on the staffs of hospitals and as well for the busy general practitioner who is desirous of keeping abreast with all the modern developments in surgery. The work includes a wide variety of contributions written in a practical manner by a specialist in his own subject. The work is profusely illustrated with well chosen drawings of pathological specimens, apparatus and technical procedures which were drawn during the actual performance of the operations. The medical aspects of surgery are also considered. Volume 1 of 1742 pages is devoted to five

chapters, namely, on anesthesia, the abdomen, rectum, x-ray diagnosis, and radium treatment. There are exhaustive discussions on the details of the subjects under consideration and an opportunity to know the view point of English surgeons who are particularly familiar with the subjects which they present. Considerable emphasis is placed upon pathology which is carefully presented in the discussions and in the numerous illustrations. Only the most useful and modern operative technical procedures are illustrated and discussed. The print is clear and attractive. The bibliography is unfortunately extremely limited. A comprehensive index is appended. The work is comprehensive and should fill the needs of the post-graduate student of surgery and of those who are moderately advanced in their surgical training.

EMIL GOETSCH

The Diagnosis and Treatment of Diseases of the Peripheral Arteries. By Saul S. Samuels, M.D. Octavo of 260 pages, illustrated. New York, Oxford University Press, 1936. Cloth, \$3.50.

This most welcome volume on a newly developed field of therapy in peripheral vascular diseases is concise and comprehensive. It is of value to workers in circulatory disorders of the extremities as well as to the general practitioner and surgeon. The author correlates the various diseases in such a way as to bring together many of the divergent views reported in recent literature from clinics throughout the country. Dr. Samuels has had extensive experience with peripheral vascular diseases and especially with thrombo-angitis obliterans, over the past ten years.

The first four chapters are taken up with a careful investigation of the symptoms and a more detailed discussion of the instruments of precision that are used in determining the degree of vascular occlusion and the resulting effect on tissues.

The fifth chapter takes up the subject of thrombo-angitis obliterans in detail. It occupies about two-thirds of the volume. Many interesting points are brought out and especially the results shown by the author in treating markedly advanced cases of extensive gangrene of the extremities by the use of 2-5 per cent solutions of saline intravenously (150-300 cc.). He stresses the harmful effects that smoking has on this disease so much that the reader wonders if the cessation of tobacco per se together with rest are not the real factors in the healing as other conservative methods report similar results.

The sixth chapter treats of the arteriosclerotic type of peripheral vascular diseases

but not with near as much enthusiasm of success.

The remaining four chapters are taken up with the less common types of vascular disorders, such as Raynaud's disease, erythromelalgia, essential thrombophilia.

The final chapter is useful in the discussion of medicolegal aspects of cases in which the point of claim of those injured who have a pre-existing circulatory deficiency, is well taken by the author.

On the whole, this book is well-written and is a step forward in medical research to stimulate others to publish their views in the peripheral vascular field. The only objections found in this volume on the subject of treating arterial diseases as a whole, are that the author gives the impression that his treatment by the use of intravenous saline solutions is the only conservative method but he fails to summarize his results for comparison with other equally excellent methods such as the pavaex, typhoid intravenously, mecholyl, iontophoresis, etc., of other workers in the field.

HUGH L. MURPHY

A Textbook of Biochemistry.—By Benjamin Harrow, Ph.D., and Carl P. Sherwin, M.D. Octavo of 797 pages, illustrated. Philadelphia, W. B. Saunders Company, 1935. Cloth, \$6.00.

The aim of this book is to describe some basic patterns of human behaviour and to show their probable origin in this or that cell or tissue need.

It is no formal treatise and no attempt is made to follow a rigid pattern of exposition. Nor does it wander into the "bad lands" of physical chemistry, electro-dynamics, calculus, and other fields outside the domain of bio-chemistry. For the connoisseur who wishes to penetrate and explore certain phenomena more deeply, there is an adequate bibliography following each chapter.

The editors prominent educators in this field have used their pedagogic skill to present to the non-chemically trained, text that can be readily understood. Most chapters are prefaced with definitions of principles upon which the discussions are based. Mathematical treatment of theories are avoided as much as possible.

This reviewer wishes to convey to the editors that their choice and presentation of the subject matter could be improved upon in the matter of relative value and space devoted to various subjects, such as the chapters on Mineral Metabolism, Function of Water in the Organism, Metabolism of Proteins and Amino Acids, Oxidations and Reductions to mention but a few.

Whether the writers of the various chapters are accepted authorities in their fields is debatable.

GREGORY S DUBOFF

Principles and Practice of Preventive Medicine Edited by C W Hutt, M D and H Hyslop Thomson, M D Two volumes Quarto, illustrated London, Methuen & Co, Ltd 1935 Cloth, £3-13-6

This publication presented in two large volumes, is most comprehensive in its treatment of the great number of topics included in the present-day consideration of preventive medicine and hygiene

For the public health official, or the practitioner of medicine interested especially in the prevention of disease, this is a valuable book for general reference. For the average physician in general practice there are books on the subject that are less voluminous and hence, more practical for every-day use

However, one who seeks information on some particular topic will find a vast array of facts and data at his disposal

While the experiences and procedures which prevail in the public health field in various countries of the world are quoted, yet the British approach to such problems is presented to a generous degree This gives opportunity for the American physician to compare English methods with those applied in the United States From this viewpoint the chapters on tuberculosis, venereal diseases and others are of special interest.

Frequent reference to British laws and court decisions handicap the publication insofar as its use by the American physician is concerned.

The alphabetic arrangement of the infectious diseases may facilitate quick reference, but it would seem more logical from an epidemiologic viewpoint to group them as to sources of infection, e.g., respiratory, gastro-intestinal and so on

ALFRED E SHIPLEY

Diseases of the Skin. By Frank C Knowles, M D Third edition Octavo of 640 pages, illustrated Philadelphia, Lea & Febiger, 1935 Cloth, \$6 50

In reviewing this new Knowles we can truly say that its arrangement of symptoms as to location, distribution, and sites of predilection is well developed and carried out.

The consideration of allergy and allergic dermatoses is concise yet covers the field quite well We find that the old as well as the newer therapeutic agents and modalities have been properly evaluated The section on psoriasis is exceedingly interesting and shows a definite desire on the part of the author to give all investigations and ideas on this common affliction well considered thought.

Dermatitis, that all embracing subject, is covered from every angle as to etiology, symptomatology and treatment

The section on skin cancer, tuberculosis of the skin, syphilis and the fungus and animal parasitic diseases are full enough to cover all we really know about them, and in a manner most intelligible to the general practitioner as well as the dermatologist.

B B BERKOWITZ

Tumors of the Urinary Bladder By Edwin Beer, M D Octavo of 166 pages, illustrated Baltimore, William Wood & Company, 1935 Cloth, \$3 50

Beer's contribution to the urological literature is a very valuable one. His experience with bladder tumors has been prolonged and intensive, and he has analyzed his results with painstaking accuracy

There will be many contradictions to his conclusion that infiltrating tumors should be completely resected, even if the resection is extensive, even if a ureteral orifice is involved, and even if the mortality is high, but we believe that Beer has carried his point. Although in disagreement no reader will fail to be stimulated beneficially

The monograph has also the distinction of disproving or at least valiantly contradicting most of the recent extravaganzas, as infallible biopsies from small fragments, accurate histological grading, and high metastasis incidence

There is an excellent bibliography and a complete index.

H L WEHRBEIN

Sir Donald Macalister of Tarbert. By His Wife Octavo of 392 pages London, Macmillan and Co Ltd, 1935 Cloth, 12/6

The biography of Sir Donald Macalister, written by his wife, is the history of an outstanding personality From his early childhood, he was a very precocious student. During his undergraduate days at St. John's College, Cambridge, he stood high in his class and won such honors as the Senior Wrangler and First Smith's Prizeman He pursued the study of medicine, doing commendable work in physiology and pharmacology However, it was in the realm of administrative work, as Principal and Chancellor of Glasgow University for more than a quarter of a century, that he attained his greatest success

The chapters devoted to his extensive travels, his observations on these journeys and the famous personalities with whom he came into contact, are particularly interesting

The book is very well written by one who was his life partner and fully shared his interests and ideals

WILLIAM RACHLIN

VITAMINS IN CANNED FOODS

II. VITAMIN D

• One of the most interesting chapters in the history of the science of nutrition is that relating to vitamin D. It is a record of steady advances in our knowledge concerning the vitamin. Starting with the work of Huldschinsky in 1919 on the ultraviolet irradiation of rachitic children, passing to the classical discovery in 1924 by Steenbock (1) and by Hess (2) that irradiated foods may acquire antirachitic potency, and extending through the profound studies of Windaus (3) and other investigators, on the constitution of the pure vitamin D obtained by ultraviolet irradiation of ergosterol, the story of vitamin D is a story of steady, scientific progress.

As a result of these basic contributions, there are available today a number of excellent standardized carriers of vitamin D. Viosterol, and the fish liver oils, and their concentrates, are readily available for use in the campaign against rickets whose prevalence, especially among infants in large urban centers, still remains high. In addition to these vitamin D carriers, the vitamin D fortified or irradiated foods have appeared within recent years.

It has become increasingly evident that there are a number of compounds which may promote calcification in the various animal species. It is further evident that these compounds vary in their physiologic efficiency with various animal species, or

that they are 'species specific.' A number of forms of vitamin D have been postulated (4) and much research in the vitamin D field has been directed toward their isolation and identification.

In general, natural foods have never been regarded as important sources of vitamin D. The commonest food articles show extremely low antirachitic potencies when measured by conventional methods. However, recent evidence has been offered that the contribution of vitamin D made by a varied diet of canned foods may be more significant than has heretofore been supposed (5). While common foods admittedly cannot supply the high demands of infancy and childhood or other phases of the life cycle, for vitamin D, it would appear that they may supply significant amounts of the vitamin to the diet, especially in the case of the adult human, concerning whose quantitative vitamin D requirement comparatively little is known.

Biological research has shown that canned marine products such as salmon, shrimp, and oysters (6) make a small but definite contribution of the antirachitic factor to the diet. We desire to direct the attention of our readers to these interesting facts about canned foods in general, and these canned marine products in particular.

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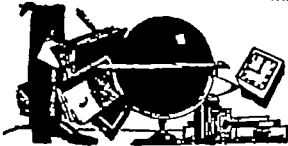
- (1) 1924, J. Biol. Chem. 67, 405
(2) 1924, J. Biol. Chem. 77, 201
(3) 1925, Ann. 492, 229
(4) 1925, Physiological Reviews 1, 1-97

- (5) 1934, Ind. Eng. Chem. 26, 728
(6) a. 1933, J. Home Econ. 27, 658
b. 1933, Science 78, 268
c. 1928, Wis. Agr. Expt. Sta. Bul. 225, 124

This is the fifteenth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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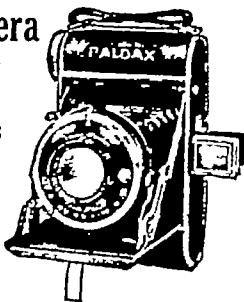
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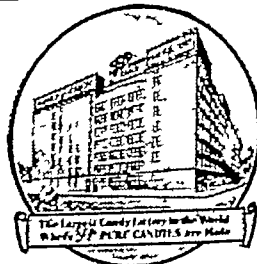
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Travel and Resorts

Making Travel Healthier

Air-conditioning has been promoted along lines of effecting comfort, and so little is being stressed regarding the angle of health.

The railroads were probably induced to equip trains with air-conditioning as a means of overcoming the objectionable dirt and fumes of the steam locomotive. Little have they realized that in addition to protecting clothes against soiling and cooling the temper of passengers, they have in a greater measure safeguarded patrons against the hazards of breathing coal dust, coal gas, and the usual stagnant air of poorly ventilated trains in winter, not to mention the annoyance of drafts.

It is interesting to read the report of J J Pelley, President of the Association of American Railroads, announcing that the traveling public is being asked to submit views on the efficiency of air-conditioning equipment now in use on passenger trains throughout this country.

This is to be done in connection with the exhaustive research now being conducted by the Equipment Research Division of the Association of American Railroads in order to determine how well the various air-conditioning devices in use on passenger cars function under varying climatic and operating conditions, what might be done to improve their performance, and what standardization of such equipment can be developed in order to reduce the cost of operation and maintenance.

Air-conditioning engineers from thirty of the leading railroads have been engaged in an extensive study of that subject at Ohio State University and elsewhere, and beginning the last week of July, will conduct a series of tests on trains throughout the United States in order to secure data as to results being obtained from air-conditioning of passenger cars. In connection with those tests, there has been prepared a questionnaire which will be distributed to passengers by the research engineers.

In the questionnaire, inquiry will be made as to whether, in the opinion of the passenger, the car or train is too warm or too cold, if it is "clammy," stuffy, drafty, or noisy, or possibly too cool upon entering. Mr and Mrs Passenger will also be asked whether there are any objectionable odors, evidence of smoke when passing through the tunnels, excessive tobacco smoke, and, if occupying a



berth in a sleeping car, whether it is too warm, too cool, or insufficiently ventilated.

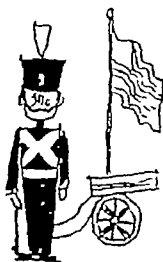
The passenger must be pleased, in the parlance of the railroads, and if the air-conditioning is or is not entirely satisfactory, he is going to have an opportunity to express himself to such extent as he sees fit. The questionnaires will be collected by the research engineers and the answers carefully tabulated. At the same time the answers will be compared with the analysis of air conditions shown to have existed through scientific tests in the particular car or train on that day.

In order to make the scientific tests, the research engineers have been equipped with small, especially designed kits about the size of an ordinary handbag, containing the most delicate and sensitive instruments that have yet been devised for such a purpose. The instruments, among other things, will record and measure the slightest draft, one which can not be felt by the ordinary person, chart the humidity and temperature as they may vary in the car over a twenty-four hour period, detect the remotest trace of carbon dioxide in the car as well as count the bacteria in the air. Another will calculate the actual refrigeration, while still another will show the effect of the rays of the sun through the windows and against the curtains of the car.

The course of special study undertaken by the research engineers at Ohio State University covered all phases of air-conditioning. It was conducted by L W Wallace, Director of Equipment Research of the Association of American Railroads, and by Professor A. I. Brown of the Engineering School of the University, who is serving as special consultant in this matter.

During the time of making the road tests, a series of experiments by the Research Equipment Division as to air-conditioning of passenger cars will be under way at Ohio State University, the Mt. Clare Shops of the Baltimore & Ohio at Baltimore, Maryland, and the Pullman Standard Car Manufacturing Plant in Chicago. In these experiments, various types of air-conditioning equipment will be put through exhaustive tests in order to ascertain what improvements can be made so as to insure the maintenance of proper temperatures under varying climatic conditions in passenger cars.

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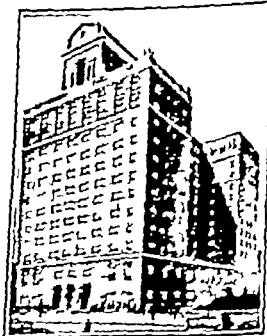
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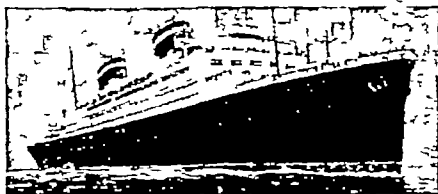
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August	79 1	
September	79 6	
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(Continued on page xxvii)

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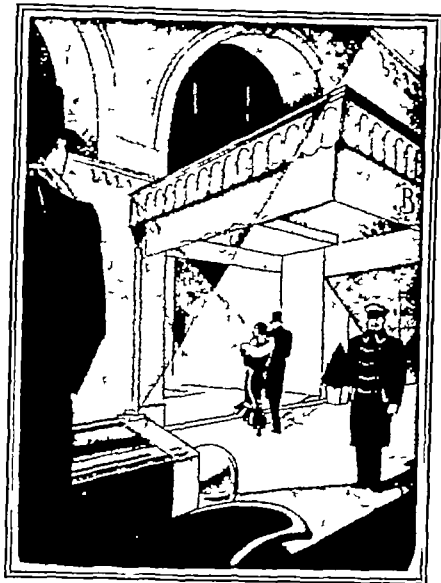
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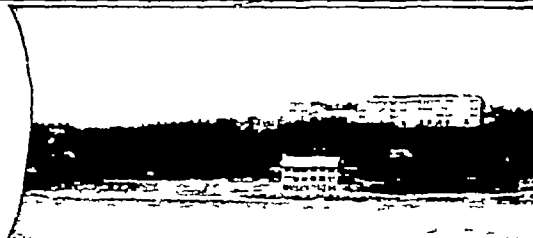
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Louis E. Pike, Mgr

CLOSE TO PENNA. R. R. STATION

(Continued from page xxxii)

Compared with Bermuda temperatures, our average mean for January over the past 60 years is 31.4, for the hottest month (July) 74.0. Visitors to Bermuda during our recent excessive heat spell reported that while we were suffering with temperatures over 103 degrees, they were enjoying the comparative coolness of only 84, and that at a time when almost every place had unusually high temperatures

* * *

"Killer" Train Starts

A "killer" train, equipped to slay millions of living things, slipped quietly out of London recently, and within a few minutes was bombarding the countryside. The authorities, however, were undisturbed—there was no talk of the hellish inventions of modern warfare, and not even a warning rumble issued from the Home Office

For the lethal train, one of the most unusual ever to run on rails, was the "Weed-killer Special" of the London, Midland and Scottish Railway, starting upon an experimental run over the branch lines of the railway, with the grim determination to route the weed armies along the right of way

Moving at from 20 to 25 miles per hour, the train will spray along and on either side of the track from the brake van, a deadly solution that not only kills existing weeds, but is expected to inhibit new growths. Authorities predict that, after three years, the strength of the invaders will be so broken that only the lightest spraying will be required to keep them out

The train comprises an engine, a number of rail tank cars filled with concentrated chemical, two especially constructed tenders, and a brake van fitted with spraying apparatus. The combined capacity of the two tenders is 7,000 gallons of solution, in the proportion of one-third concentrate to two-thirds water. Some 2,700 gallons of concentrate are carried in reserve. The train is recharged with chemicals at convenient points along the route.

The new method is expected to supersede existing methods of weed-suppression by hand spraying

* * *

Travel Brevities

A BUSY WEEK at the Seaside Hotel in Atlantic City found the following doctors regis-

(Continued on page xxxii)

THE ONLY R A G W E E D AT BIG MOOSE IS WRAPPED IN CELLOPHANE

so you can
safely advise
hay fever
patients to
vacation
at Higby's

A survey of the Adirondack region by the State Health Department revealed that the immediate vicinity of Big Moose Lake is about the only section of New York State entirely free of ragweed. To keep Higby's so, a sample in a cellophane bag constantly reminds employees to report and destroy any signs of this objectionable vegetation

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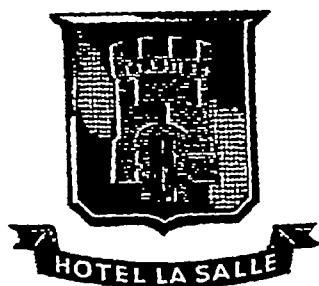
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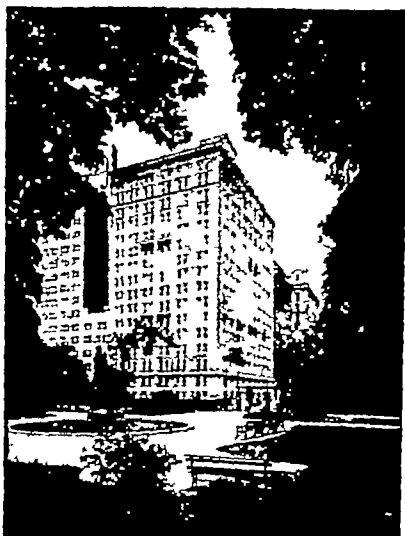
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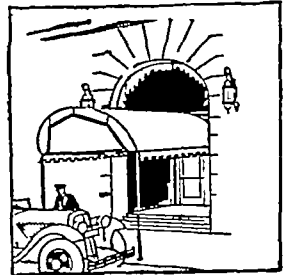
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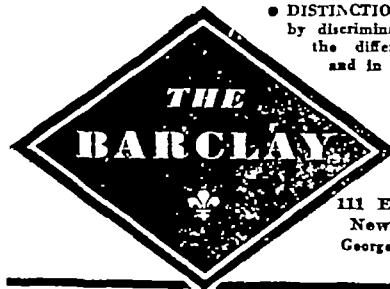
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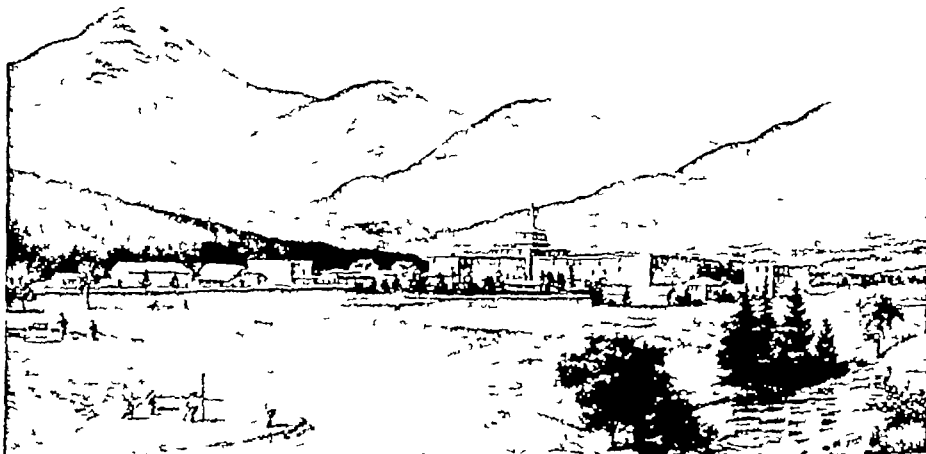
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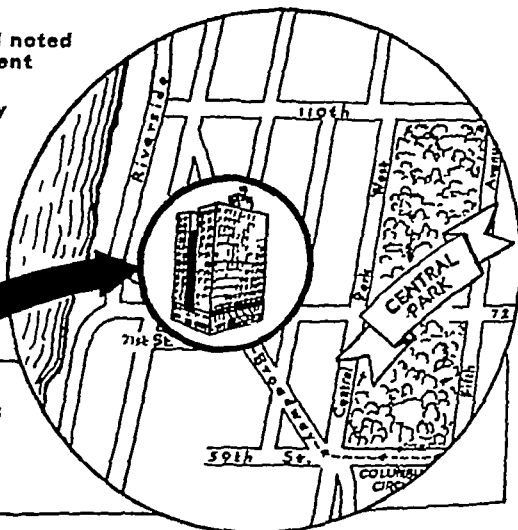
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(Continued from page xxxv)

tered as guests Dr Ira Burns of Delaware, Dr F C Marino, and Dr and Mrs Donald Shipley of Maryland, Dr S M Nissley, Dr J E Holt and family, and Dr E. Lois Van Loon of Pennsylvania, Dr James Howard, and Dr and Mrs Eugene S Mullin of New Jersey, and Dr J B Ahouse of New York

MANY PHYSICIANS spent the early part of July at the Grossinger Hotel and Country Club at Ferndale, N Y The guests included Drs H Reiter, H Camins, Herman Cohen, and Henry Weiss of New Jersey, Dr Polak of Pennsylvania, and Drs William Miller, Grossman, I Goodman, Minger, P W Rogers, Nathan Schwartz, H Herman, Paul Perlaman, Harry Weisberg, Harry Phillips, Simon Cooper, A. Rolson, John Sarge, and A Braunstein of New York

DOCTORS registering at the St George Hotel Beach and Golf Club in Bermuda recently, included Dr B A Daskal and Dr Paul V Carelli of Illinois, Dr R W Hancock of Ohio, Dr H Moshowitz of New Jersey, and Dr B Lipschitz of New York

STOPPING for the summer season or a shorter vacation at the Hotel Traymore, Atlantic City, are the following Dr and Mrs Russell Wright of Michigan, Dr and Mrs S J Georgetson, Dr Albert Brower, Dr R R Shively, Dr and Mrs Paul S Pittinger, and Dr James P McKelvy of Pennsylvania, and Dr and Mrs Chauncey A Walker of Ohio

AMONG THOSE SAILING for Bermuda during the month of July aboard the "Queen of Bermuda," were Dr and Mrs Robert W Fernie of Massachusetts, and Dr and Mrs M L Weinstein of Illinois

RECENT ARRIVALS at the Ambassador in Atlantic City included Dr and Mrs L A Lydic and Dr and Mrs R S Licklider of Ohio, Dr and Mrs A B Crites, Dr and Mrs H J McAnally, Dr and Mrs H Mayer, and Dr and Mrs R E Byrns and daughters of Missouri, Dr and Mrs Howard J Maldeis of Maryland, and Dr and Mrs A Recinos of Washington, D C

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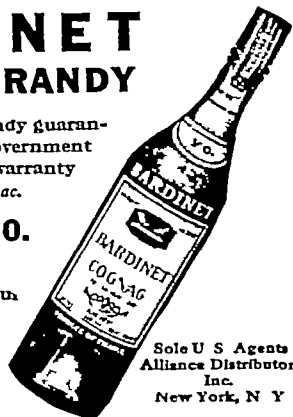
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Studies in Bladder Function III

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M. Bernard Brahdy, M.D.

The Treatment of Bronchial Asthma by Intratracheal Injections of Iodized
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William Anderson, M.D.

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Case Report—Outbreak of Cowpox Caused by a Vaccination Involving Two
Families and Two Herds of Cattle

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Between Mental Health and Mental Disease—Prolonged Hunger Strike

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NEW YORK THE JOURNAL OF MEDICINE

VOL. 36—No. 16

AUGUST 15, 1936

PAGES 1135 to 1192

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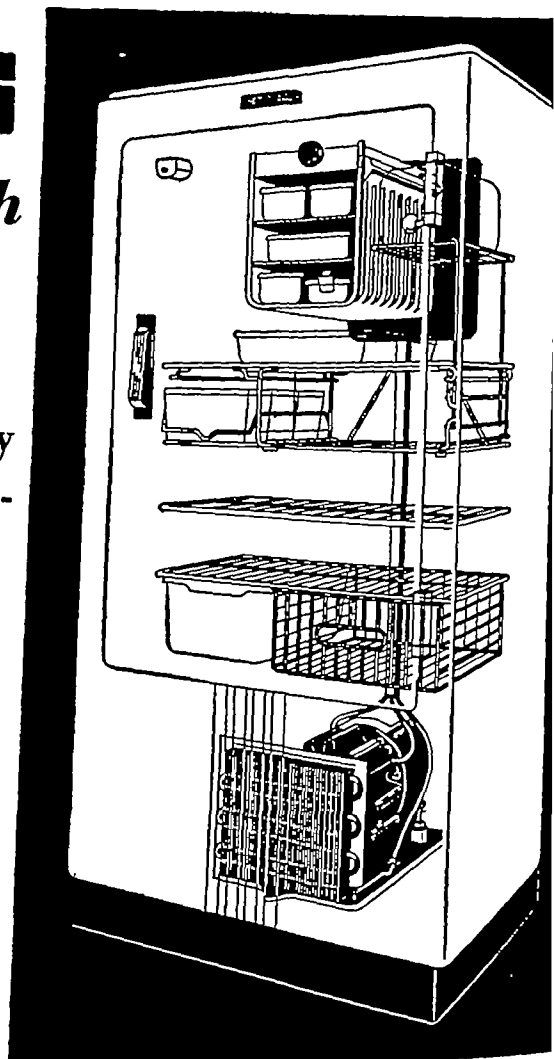
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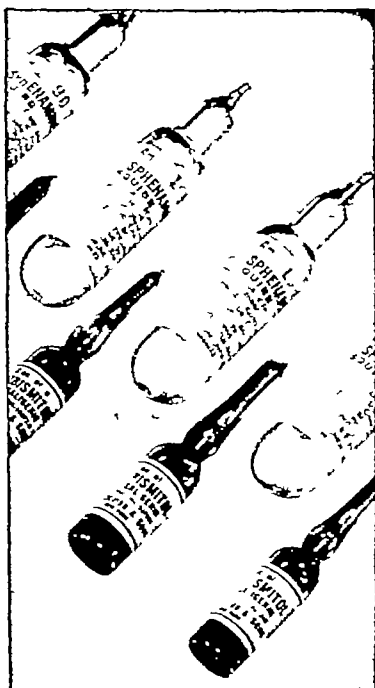


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* Martenstein H. Syphilis Treatment Enquiry in Five Countries, *League of Nations Quart. Bull. Health Organ* 4:129 1935



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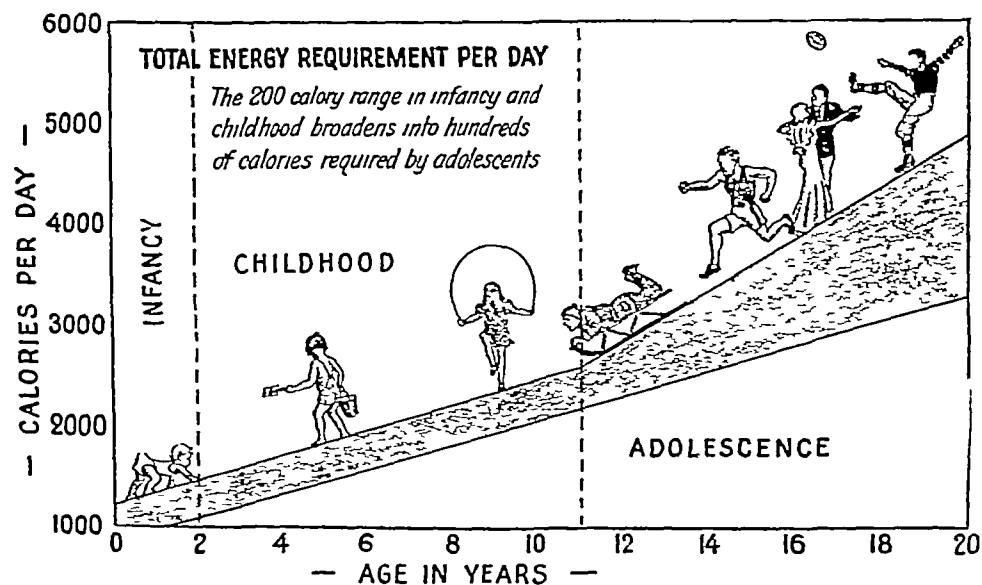
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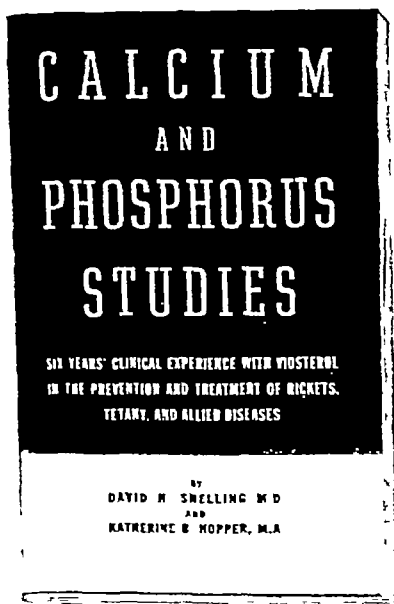
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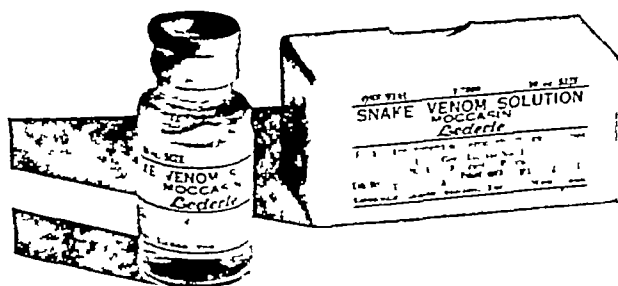
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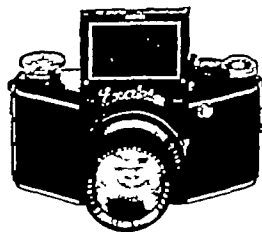
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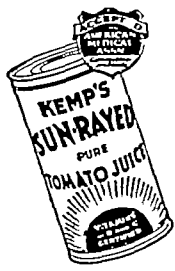


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**RECENT ADVANCES IN CLINICAL CYSTOMETRY BY MEANS
OF THE MICROCYSTOMETER****Studies in Bladder Function III**IRVING SIMONS, M D, and WILLIAM BISHER, M D, *New York City**From the Department of Urology, Hospital for Joint Diseases***Historical**

A decade has passed since Rose¹ first introduced cystometry as a new clinical procedure for investigating vesical dysfunction in man. The physical principles underlying this valuable contribution had been understood and utilized in the experimental laboratory for half a century. As far back as 1876, Dubois² is said to have used an instrument equipped with a water manometer to study changes in bladder pressure in animals. The Cystoscope, presented to the profession by Max Nitze at a time when cystometry was still in its infancy, proved the greatest obstacle to the further development of this modality during the subsequent formative period of Urology as a specialty.

Thanks to the untiring efforts of several investigators in this country, the importance of a physiological approach to the study of disturbances in bladder function has now been recognized and the interest of others than those dealing with purely urological problems attracted by the possibilities of this method of investigation. The literature since 1926 is truly formidable. Contributions by Rose and his co-workers,³ Learmonth,⁴ Lewis, Langworthy and Dees,⁵ D. Denny-Brown and Robertson,⁶ Barrington,⁷ Muschat and Johnston,¹⁰ and others too numerous but justly deserving of mention described the neuroanatomy, neurophysiology, and pharmacodynamics of the urinary bladder. The practical value of cystometry has been frequently

demonstrated by many interesting and unusual case reports. Most of the credit for this monumental work belongs to Rose not by right of discovery alone but for the reason that he investigated cystometry from many different angles, indicated its usefulness, admitted its limitations, and encouraged others to engage in research along the lines he had followed.

Significant of the entire history of this subject is the fact that technically it failed to keep pace with both the quantity and quality of work done. In 1927, the Rose-Sanborn cystometer was introduced. It was the only well-constructed instrument obtainable commercially for a period of five years and a marvel of mechanical perfection. Its cost and size made it practically prohibitive for the individual. In 1932, McKinley¹¹ presented a valueless model, a modification which, likewise, disregarded the important fact that the world at large was then passing through a period of severe economic depression. Muschat and Johnston,¹⁰ in 1932, offered an inexpensive instrument embodying the basic requirements for measuring intracystic pressure in the human, and, since the preparation of this review, a further contribution to the armamentarium of cystometry was made by Weyrauch¹² in the early part of 1936.

Although the importance of the internal and external vesical sphincters had been commented upon by various investigators, these cystometers were neither con-

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micturition to be described in the following phase. Initiation is involuntary in infancy and under certain pathological conditions may persist as a reflex act in adult life.

3 *Continuation* As soon as both vesical sphincters become patent, all voluntary action may cease. Three possible reasons are given to elucidate the mechanism governing the opening of either sphincter.

The internal sphincter may open because

(a) Increased intracystic pressure directly behind the bladder outlet forces the sphincter open hydrostatically.

(b) Inhibitory impulses via the pelvic nerve overpower excitatory impulses transmitted by the hypogastric nerve. In other words, the reciprocal antagonism of the sympathetic and parasympathetic components of the autonomic innervation of the detrusor and internal sphincter, which, under certain conditions is finely balanced becomes disjointed at this time with parasympathetic action in command of the situation.

(c) Contraction of the trigonal musculature in unity with the rest of the detrusor depresses the posterior lip of the internal sphincter and opens the prostatic urethra to the rapidly approaching column of urine.

The external sphincter opens after the internal vesical sphincter has been dilated. Three theories are again offered to explain this phenomenon.

(a) The force of the unrushing stream raises the pressure in that portion of the posterior urethra proximal to the external sphincter and the latter is likewise blown open hydrostatically.

(b) The normal balanced reciprocal antagonism said to exist between the pelvic and pudic nerves is disturbed in favor of the inhibitory action of the former. No direct evidence has been as yet presented to prove parasympathetic innervation of the external sphincter although this may be eventually proved.

(c) Cerebral inhibitory impulses reduce the tonus of the external sphincter by way of the somatic route—the internal pudendal nerve.

The continuation or sustaining phase of the mechanism of micturition is usually involuntary. A reflex arc exists having both afferent and efferent paths in the pelvic nerve and a center in the sacral outflow of the cord. Urination may be interrupted or terminated at any time during this phase by voluntary contraction of the external sphincter and perineal muscles. All possibilities presented to clarify the mechanism of sphincteric action have much experimental weight in their favor. A combination of these explanations does not seem incompatible.

4 *Termination* When the bladder is nearly empty, the outflow of urine is again assisted by voluntary action. The final expulsion of fluid from the posterior urethra is accomplished by contraction of striated

muscles, the transverse perinei, bulbo-cavernosi, and anterior fibers of the levator ani. In spite of this powerful concerted effort, a few drops of urine are left to trickle out by gravity. The external sphincter closes first. Both sphincters close for reasons similar but opposite to those given previously to explain the rationale of their opening.

We have seen that normal micturition depends upon a finely coordinated process which functions partly under control of the will and is in part involuntary. The working theory advanced is not offered as the last word on the subject. However, changes may be made at any time without materially influencing our basic conceptions which have been made elastic for that very purpose. On one point we must all agree, the act of micturition is chiefly dependent upon detrusor contraction without which normal urination as described cannot occur. Since cystometry furnishes us with concrete information regarding the myogenic and neurogenic constituents of the urinary bladder, its importance as a clinical procedure should be clearly indicated.

Technic of Microcystometry

A complete cystometric examination on a cooperative patient should require very little more time than is necessary to irrigate an infected bladder. After the patient has voided, he is placed on a bed or examining table in a relaxed recumbent position, legs extended, arms parallel to the side of the body, and the head slightly elevated. A number 16 or 18 French soft rubber catheter (two-eyed Robinson preferred) is passed without previous urethral anesthesia. The bladder is completely evacuated and a note made of the amount and appearance of residual urine if present.

The Microcystometer situated upon a small table on the right and level with the patient is then connected to the indwelling catheter and twenty c.c. of antiseptic irrigating fluid at room temperature introduced into the bladder. We have found that accurate pressure readings are only obtained when the fluid in the pressure tube at zero is on a level with the lowest point of the bladder. This is now accomplished by connecting the bladder and instrument in series, and with

structed nor adjusted to measure minute changes in pressure that one would expect to find resulting from the application of very small quantities of fluid as a dilating medium for the sphincters similar to the technic employed with large amounts of fluid for measuring detrusor tonus. Accordingly, in 1935, Simons¹² developed the Microcystometer, a small, very compact, portable, accurate, instrument capable of delivering any measurable quantity of fluid under controllable pressure, low in price, and, most important of all, furnished with a Mercury Manometer standardized and guaranteed by the United States Department of Commerce.

This instrument is simple to operate. It provides a record of detrusor tonus in health and disease with the same constancy and uniformity that our modern mercury sphygmomanometers are required by law to furnish. By means of an accessory instrument, the Sphincterometer,¹⁴ it will also record the actual muscular tone of both the internal and external vesical sphincters as individual organs. The Microcystometer, evolved after much experimentation has stood the test of time and the very rigid specifications originally outlined. It obviates false conclusions resulting from physical and mechanical defects and has furnished us with uniform, comparable results at all times.

Physiology of Micturition

Familiarity with our present conception of the physiology of micturition is essential before the technical and diagnostic elements of cystometry can be fully appreciated. We have attempted to incorporate some of the conclusions of Learmonth,¹⁵ D. Denny-Brown, Hovelacque,¹⁶ Latarjet and Bonnet,¹⁷ Langworthy,¹⁸ Barrington, Beattie,²⁰ Denig,²¹ and Young and Macht²² with our own observations for the purpose of providing a working hypothesis on which to base all that is to follow in our cystometric evaluation of the detrusor. Such controversial points as one would expect to find in a subject of this nature in no measure detract from the clinical value of cystometry. They rather intrigue our imagination and stimulate us to more intensive study.

For convenience of description, the mechanism of micturition may be divided into four phases, (1) instigation, (2) initiation, (3) continuation, (4) termination.

1 Instigation. Before urination is begun, a distinct and singular sensation is experienced. This sensation has been termed the first desire to void and occurs under normal conditions when the bladder has received about 200 cubic centimeters of urine at which time the average intracystic pressure reaches about six millimeters of mercury. Intermittent rhythmical contractions of the detrusor have been found to be present under certain conditions during this period. The afferent path of this impulse is distributed through sensory fibers of the pelvic nerve.

Several explanations have been offered to trace the origin of this impulse. Three possibilities will be discussed. *First*, the first desire to void may be caused by the weight of the urine accumulated pressing on proprioceptive end organs in the bladder and vesical neck. In view of the transitory nature of the sensation and the disappearance of the same when the bladder has accommodated itself to increased intracystic pressure by dilation, this explanation must be discounted. *Secondly*, we are not convinced that in this mechanism the true explanation can be attributed to the flow of urine through the posterior urethra as a result of depression of the posterior lip of the internal sphincter by trigonal contraction. With the bladder outlet tightly plugged by an indwelling catheter of large caliber, first desire has been repeatedly demonstrated during cystometric examinations. Furthermore, cystograms of normal bladders filled to and just beyond this point fail to show a niche at the vesical neck. *Finally*, fluoroscopic observations of the bladder distended with radiopaque solutions show detrusor contraction to be in progress during the act of micturition before the internal sphincter has opened and funneling appeared. A preponderance of evidence points to the bladder itself as the seat of origin for this initial sensation which may very well be the direct result of pressure on nerve fibers adjacent to stretching muscle bundles.

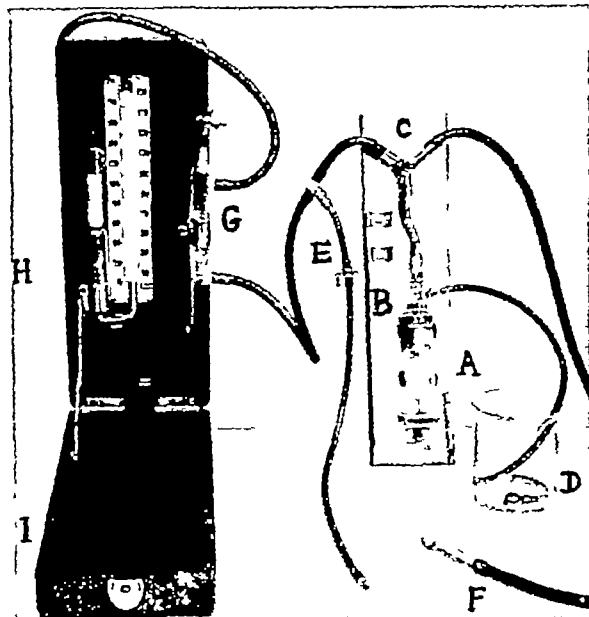
2 Initiation. The initial phase of bladder emptying is a voluntary process. We are consciously directed to a proper place to perform the act. Muscular activity of the diaphragm and recti is usually called into play to start the stream along its path through the urethra. Impulses from the brain pass down the central nervous system activating efferent fibers of a reflex arc for

It is also of utmost importance that in all cystometric examinations the patient be in a willing state of mind and not be emotionally perturbed. For this reason it is important that the examining room be quiet. Any straining or struggling or undue pain or irritation will bring into play the voluntary abdominal muscles and disturb the true estimation of intravesical pressure.

The filling mechanism. A metal plate with spring clamps to which is attached a twenty c.c. syringe (A), (B) a two-way valve, (D) a tube and metal sinker, which is lowered into the source of fluid supply, (C) a three-way valve with a tube (F) which extends from its right arm to the patient, extending from the left arm of the three-way valve to the lower lateral arm of the glass pressure-tube (G) is a tube in the course of which is inserted an emptying valve (E).

The intermediary mechanism. A graduated glass pressure tube (G) is attached by an automatic spring-clamp to a metal rod, the elevator, which is fixed to the upper half of the walnut box and allows the pressure-tube to be adjusted at different levels, the pressure-tube has a vent-valve above, and its upper lateral arm is attached by a tube to the recording apparatus.

The recording mechanism. A standardized mercury manometer (H) which records to 200 mm, is incorporated in the box-lid. The lower half of the box (I) is designed to contain the metal plate and all necessary tubing and accessories.



In the first frame (0-250 c.c.) the desire to void (*) occurred in this series in the fourth space (200 c.c.)

In the second frame (300-500 c.c.) the pressure takes a distinct rise from eight to fifteen mm. While this does not seem great, it is large compared with the figures (3 to 6 mm) found in the second frame of Group V, true neurogenic hypotonia.

In the second frame of Group III the point of pain (P) is found in the eighth space, and the point of severe pain (SP) in the tenth space.

We do not find it of value to distend the bladder much, if any, beyond this latter (SP) point. In this third frame the pressure rises (16, 24 mm etc.) and the patient becoming rapidly more and more

uncomfortable voids around the catheter. We do not believe that this gives a true evaluation of the tonus of the internal vesical sphincter.

The maximum voluntary pressure (MVP) is normally 62 mm. It is not an expression of the power of the detrusor but of the power of the abdominal muscles, which raises intra-abdominal pressure and transmits it to the fluid contained within the bladder.

We have noted the MVP as high as 150 mm and as low as forty mm. It has been stated by former observers that it is not high in neurogenic hypotonia but we have seen it at its highest in some of these cases. In fact they use this type of expulsion to make up for paresis of the detrusor. On the other hand we have seen cases of neurogenic hypertonia in which the detrusor registered higher figures than the abdominal muscles.

The height to which the MVP rises is in part dependent upon the patient's control of his abdominal skeletal muscles, chiefly of his recti.

So far we have found no clinical significance in the MVP, but will continue to record and to study it.

Typical case report

the air vent on top of the pressure tube open, the pressure tube is raised and lowered until a fluid level at zero is obtained with only respiratory excursions of the fluid meniscus evident. The air vent is closed and the examination begun.

After each increment of fifty cc of solution has been injected, a reading on the manometer is immediately taken and recorded numerically. The bladder is filled without undue force. When maximum distension is reached, the patient is instructed to void with all possible effort while the bladder and instrument are connected and the resulting pressure reading incorporated in our chart as the Maximal Voluntary Pressure.

The periods at which the patient experiences a first desire to void, pain, and severe pain are carefully noted and likewise added to our chart by means of appropriate symbols. By means of these sensory points which have a more significant meaning and will be discussed in detail a little later on, we guard against overdistension of the bladder—a very dangerous, unpleasant procedure entirely unnecessary at anytime. For interpretation of results, graphic records or plotted curves as previously used were found unnecessary.

Microcystometric Evaluation of the Detrusor

One hundred and sixty-one cystometrograms in a series of one hundred and sixteen patients were reviewed to determine if possible what constituted the normal detrusor chart and the criteria for diagnosing deviations from this norm when they were encountered. A variety of material was utilized for this purpose furnished by the Luetic, Neurological, Gynecological, and Urological departments of the hospital where each patient referred to us received a thorough examination. Thus we were in a position to check our cystometric findings against known pathology. Where diagnoses had not been made in several instances, the cystometrogram itself solved the problem. The urological work-up always included a history, physical, urinalysis, Wassermann and Kahn, stained prostatic smear in male patients, determination of residual, exploration of the urethra for stricture, and observation cystoscopy.

When indicated, lumbar puncture, cystography, and both retrograde and intravenous pyelography were performed. The results of this investigation proved extremely interesting.

Group III The Normal Cystometric Record

A composite of forty-three cases studied with the Microcystometer showed the following record:

1, 3, 4, *5, 6, 8, 9, P10, 11, SP15, 16, 24 MVP 62†

These numbers represent the manometric pressure readings of the detrusor taken twelve times as each increment of fifty cc was added to the bladder contents, which in this record was carried to 600 cc.

It will be noted that in the first frame (250 c.c.), which is the average amount of fluid that the bladder tolerates, the pressure begins at one and very gradually rises to six mm. On account of the fact that in this frame extremely low pressures are present, it is *absolutely necessary* that an accurately standardized cystometer be used, and such standardization is impossible unless the mercury manometer is standardized according to the regulations of the U S Bureau of Standards.

In such an instrument the scale must be large and easily readable in order to obtain accuracy. The mercury must be read at the highest point to which it rises, when the tri-valve is turned for an observation, inasmuch as it falls very rapidly.

We consider the *normal* charts made by certain other cystometers to be the charts of distinct *hypertonia*, as compared with the criteria laid down for the Microcystometer.

†—Meaning of symbols

*—Filling point at which patient 'Desires to void'

P—Filling point at which patient has 'Pain'

SP—Filling point at which patient has 'severe pain'

MVP—'Maximum voluntary pressure' When the bladder is full, which is at the SP point or slightly beyond it, the patient is requested to use his abdominal muscles and forcibly evacuate its contents through the catheter which is still in place.

For further details of technic see Simons, I., Studies in bladder function I. The Microcystometer, *Jour of Urol*, 34 493, 1935

It is also of utmost importance that in all cystometric examinations the patient be in a willing state of mind and not be emotionally perturbed. For this reason it is important that the examining room be quiet. Any straining or struggling or undue pain or irritation will bring into play the voluntary abdominal muscles and disturb the true estimation of intravesical pressure.

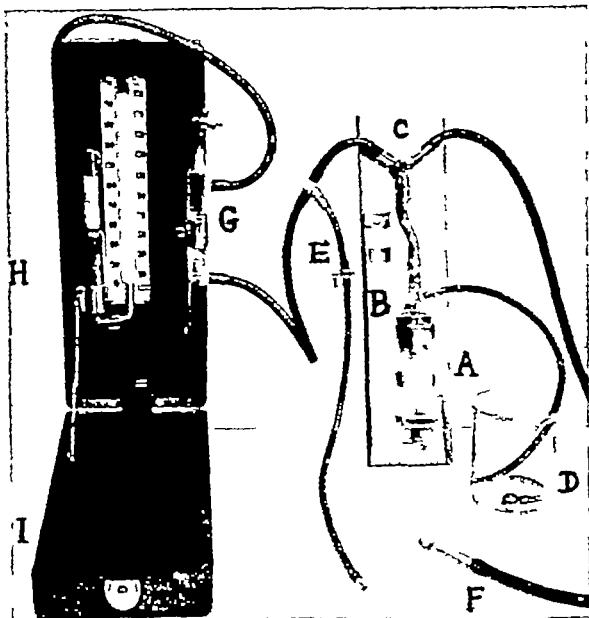
uncomfortable voids around the catheter. We do not believe that this gives a true evaluation of the tonus of the internal vesical sphincter.

The maximum voluntary pressure (MVP) is normally 62 mm. It is not an expression of the power of the detrusor but of the power of the abdominal muscles, which raises intra-abdominal pressure and transmits it to the fluid contained within the bladder.

The filling mechanism. A metal plate with spring clamps to which is attached a twenty c.c. syringe (A), (B) a two-way valve, (D) a tube and metal sinker, which is lowered into the source of fluid supply, (C) a three-way valve with a tube (F) which extends from its right arm to the patient, extending from the left arm of the three-way valve to the lower lateral arm of the glass pressure-tube (G) is a tube in the course of which is inserted an emptying valve (E).

The intermediary mechanism. A graduated glass pressure-tube (G) is attached by an automatic spring-clamp to a metal rod, the elevator, which is fixed to the upper half of the walnut box and allows the pressure-tube to be adjusted at different levels, the pressure-tube has a vent-valve above, and its upper lateral arm is attached by a tube to the recording apparatus.

The recording mechanism. A standardized mercury manometer (H) which records to 200 mm., is incorporated in the box-lid. The lower half of the box (I) is designed to contain the metal plate and all necessary tubing and accessories.



In the first frame (0-250 c.c.) the desire to void (*) occurred in this series in the fourth space (200 c.c.)

In the second frame (300-500 c.c.) the pressure takes a distinct rise from eight to fifteen mm. While this does not seem great, it is large compared with the figures (3 to 6 mm.) found in the second frame of Group V, true neurogenic hypotonia.

In the second frame of Group III the point of pain (P) is found in the eighth space, and the point of severe pain (SP) in the tenth space.

We do not find it of value to distend the bladder much, if any, beyond this latter (SP) point. In this third frame the pressure rises (16, 24 mm. etc.) and the patient becoming rapidly more and more

We have noted the MVP as high as 150 mm. and as low as forty mm. It has been stated by former observers that it is not high in neurogenic hypotonia but we have seen it at its highest in some of these cases. In fact they use this type of expulsion to make up for paresis of the detrusor. On the other hand we have seen cases of neurogenic hypertonia in which the detrusor registered higher figures than the abdominal muscles.

The height to which the MVP rises is in part dependent upon the patient's control of his abdominal skeletal muscles, chiefly of his recti.

So far we have found no clinical significance in the MVP, but will continue to record and to study it.

Typical case report

the air vent on top of the pressure tube open, the pressure tube is raised and lowered until a fluid level at zero is obtained with only respiratory excursions of the fluid meniscus evident. The air vent is closed and the examination begun.

After each increment of fifty cc of solution has been injected, a reading on the manometer is immediately taken and recorded numerically. The bladder is filled without undue force. When maximum distension is reached, the patient is instructed to void with all possible effort while the bladder and instrument are connected and the resulting pressure reading incorporated in our chart as the Maximal Voluntary Pressure.

The periods at which the patient experiences a first desire to void, pain, and severe pain are carefully noted and likewise added to our chart by means of appropriate symbols. By means of these sensory points which have a more significant meaning and will be discussed in detail a little later on, we guard against overdistension of the bladder—a very dangerous, unpleasant procedure entirely unnecessary at anytime. For interpretation of results, graphic records or plotted curves as previously used were found unnecessary.

Microcystometric Evaluation of the Detrusor

One hundred and sixty-one cystometrograms in a series of one hundred and sixteen patients were reviewed to determine if possible what constituted the normal detrusor chart and the criteria for diagnosing deviations from this norm when they were encountered. A variety of material was utilized for this purpose furnished by the Luetic, Neurological, Gynecological, and Urological departments of the hospital where each patient referred to us received a thorough examination. Thus we were in a position to check our cystometric findings against known pathology. Where diagnoses had not been made in several instances, the cystometrogram itself solved the problem. The urological work-up always included a history, physical, urinalysis, Wassermann and Kahn, stained prostatic smear in male patients, determination of residual, exploration of the urethra for stricture, and observation cystoscopy.

When indicated, lumbar puncture, cystography, and both retrograde and intravenous pyelography were performed. The results of this investigation proved extremely interesting.

Group III The Normal Cystometric Record

A composite of forty-three cases studied with the Microcystometer showed the following record:

1, 3, 4, *5, 6, 8, 9, P10, 11, SP15, 16, 24 MVP 62†

These numbers represent the manometric pressure readings of the detrusor taken twelve times as each increment of fifty cc was added to the bladder contents, which in this record was carried to 600 cc.

It will be noted that in the first frame (250 cc), which is the average amount of fluid that the bladder tolerates, the pressure begins at one and very gradually rises to six mm. On account of the fact that in this frame extremely low pressures are present, it is *absolutely necessary* that an accurately standardized cystometer be used, and such standardization is impossible unless the mercury manometer is standardized according to the regulations of the U S Bureau of Standards.

In such an instrument the scale must be large and easily readable in order to obtain accuracy. The mercury must be read at the highest point to which it rises, when the tri-valve is turned for an observation, inasmuch as it falls very rapidly.

We consider the *normal* charts made by certain other cystometers to be the charts of distinct *hypertonia*, as compared with the criteria laid down for the Microcystometer.

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MVP—'Maximum voluntary pressure' When the bladder is full, which is at the SP point or slightly beyond it, the patient is requested to use his abdominal muscles and forcibly evacuate its contents through the catheter which is still in place.

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cases in which hypotonia was exhibited (47 in number), that we are able to separate twenty-one cases of true neurogenic hypotonia (Group V) from twenty-six cases of non-neurogenic hypotonia (Group IV), in which the tonus is evidently not of etiology traceable to the spinal cord, but is of myogenic etiology and is probably due to local causes. It must be added however that we have some evidence that leads us to believe that some of these cases can be so rapidly improved, that the assumption is that it is due to interference with the autonomic nervous ganglia, which has not progressed in these cases to a condition of scar formation and permanent damage.

The differentiation of these groups (Group IV from Group V) is based on the fact that both the motor functions and the sensory functions are depressed in the true or neurogenic hypotonias (Group V). In the non-neurogenic hypotonias (Group IV) the depression of the motor function is great and often as great as in true neurogenic hypotonia (Group V), whereas in most of the non-neurogenic hypotonias (Group IV) the sensations in the bladder are either normal (Group III) or markedly approach it.

As is customary the neurologist examines the skin of the patient for perception of touch, temperature, and pain, and the extremities for muscular sense, astereognosis, etc. This evidence is supplemented during cystometry by the sensory examination of the vesical mucosa for temperature and pain, and in addition, observations are made on the muscular sense of the detrusor. These observations are of paramount importance and by means of them the sensory symbols (*, P, SP) are added to the cystometric chart. All neurogenic hypotonias of the detrusor tolerate large amounts of fluid and great degrees of stretching because their touch, pain, and muscular senses are markedly depressed and consequently they are feebly aware that their bladders are being filled. We have observed a case in which the patient was totally unaware that 1000 cc of fluid had been injected into his bladder and yet that patient completely recovered bladder-function under therapy.

Long records are the rule in both Group IV and Group V, but in Group V the sensory points are moved to the right

markedly, whereas in Group IV they are normally or very nearly normally situated. The complete lack of, or more usually the depression of, sensation allows these patients (Group V) to tolerate large amounts of fluid due to greatly diminished sensation and greatly diminished muscular power. This gives them long records (even out to 800 c.c.), which is beyond the capacity of any normal bladder, but their normally placed sensory points make it definite that they are not true neurogenic hypotonias, in which the sensory points are definitely moved far to the right.†

Passing on to a consideration of hypertonia of the detrusor it must be stated that there has been very little study of this feature. A few observations have been made by Lewis, Langworthy, and Dees⁵ in lateral column diseases, and by Watts and Uhle²³ in the hypertonia occurring in some cases of brain neoplasm.

It must be clearly understood that *acutely inflamed bladders* are not included in this study and should always be eliminated as they are all irritable and consequently hypertonic due to local causes.

In non-inflamed bladders of neurogenic type (Group I) the lesion is in the lateral

† We have already observed a few cases which we were not able to classify, in which the pressure curves in the second and third frames were *normal*, and yet, due to marked hyposensitivity, we were not able to classify them in any of the five groups, because of great vesical hyposensitivity. So far we have considered them merely as mixed types and have not tried to place them in the five groups.

These cases, allowing great vesical distension, have general *hyposensitivity*, especially visceral hyposensitivity, as checked by the stylomastoid pressure test.

TABLE II—"COMPOSITE" CYSTOMETROGRAM RECORDS OF GROUPS I, II, III, IV AND V

HYPERTONIA					
I Neurogenic	3	*33	P56	SP62	MVP 90
II Non neurogenic	2	5 8	*11 18 23		
		P31	27 SP30 36		MVP 98
III Normal	1	3 4	*5 6 8 9		
		P10	11 SP15		
		16 24			MVP 62
HYPOTONIA					
IV Non neurogenic	1	2 2 3 4	*4 5		
		P6 12	SP9 10		
		12 13 14	11, 15		MVP 77
V Neurogenic	0	1 2 2 3 3 4 5			
		6 *6 7 9	P10		
		12 14	SP10 14		
		11 18 22			MVP85

Group III Normal Cystometrogram

M. R., age twenty-five, male, colored, admitted 6-5-35

Diagnosis Nonspecific urethritis, calcaneal spur

History Gonorrhea six months ago. At present only gleet. Has had a painful left heel for two years. No urinary symptoms.

Physical examination Gleet discharge, gonococci not found

Urnies 1st. specimen faintly turbid, 2nd clear

Prostate Normal. Secretion shows occasional pus cell. No gonococci found.

Wassermann and Kahn blood tests Negative.

Neurological examination Negative.

Cystoscopy Bladder and sphincters normal. Very slightly hypertrophied.

8-21-35 Patient considered normal. Cystometry normal. Sphincterometry Internal 18, external 28.

10-28-35 Cystometry

1, 2, 3, *4, 4, 5, 6, P9, 12, SP16, MVP 100

Sensory analysis of cystometrograms

The sensory points (*, P, and SP) were enunciated by Rose. It is most important that great care be exercised in obtaining them. The examiner must ask the patient questions, but not so many as to become suggestions or 'leading questions' and force the issue. The mere presence of a catheter in the urethra is felt by the patient *but it is not desire to void*. The patient will usually let the examiner know when the real desire to void occurs. It is due to the presence in the bladder of 200 c.c. of fluid.

Pain (P) should be described to the patient as discomfort. Severe pain (SP) is the point at which the patient can hardly tolerate any more fluid in the bladder.

Some errors may occur in such a psychological test if the patient does not hear well, or if he does not thoroughly understand what is told him and what is asked of him. In some rarer instances *hyposensitiveness* of the patient may cause

difficulty and require the application of a clinical test for hyposensibility. However ordinarily one can obtain accuracy if the patient is cooperative.

The mere manometric observation of the detrusor on fractional filling is of little value without the observation of the sensory points. The recording of the sensory points makes it possible to separate neurogenic hypertonias and neurogenic hypotonias from the normal but also to do more than this. It was stated by previous observers that if a hypotonic curve was obtained, the case was one of neurologic hypotonia. Some of the cases however did not work out so well, but the cause of the discrepancy was not understood. Only a few observations were reported on hypertonias, but it was in like manner stated that if the curve was hypertonic, it was neurogenic hypertonia. Some of these cases also did not work out so well.

A careful study of the Sensory Analysis (Table I) will show us that if the sensory points are accurately elicited a considerable advance will be noted in the separation of two distinctly new groups of cases.

Referring to Table II, it will be noted that there are five groups of cases (Groups I-V). Based, however, on the mere study of manometric curves one could divide off only three groups, viz., hypertonia, normal tonus, and hypotonia, just as has been done by previous investigators. These workers knew definitely that the posterior column nervous diseases (tabes dorsalis, etc.) were to be found in the hypotonic group. But unfortunately they also found that there were cases that were hypotonic and exhibited a more or less typical hypotonic curve, which could not be verified by the neurologists as true posterior column disease. We feel that by a study of a series of such

TABLE I—SENSORY ANALYSIS OF CYSTOMETROGRAMS IN GROUPS I, II, III, IV, AND V

	*Desire Observa- tion	c.c.	P-Pain Observa- tion	c.c.	SP-Severe Pain Observa- tion	c.c.	MVP
HYPERTONIA							
I Neurogenic	2	100	3	150	4	200	100
II Non neurogenic	4	200	7	350	9	450	98
III Normal	4	200	8	400	10	500	62
HYPOTONIA							
IV Non-neurogenic	6	300	8	400	10	500	77
V Neurogenic	10	500	13	650	16	800	85

GROUP I Hypertonia Neurogenica

J S, age fifty-six, white, male, admitted 2-13-32

Diagnosis Spastic paraplegia Spastic tetraparesis caused probably by subcortical thrombotic lesions on an arteriosclerotic basis

History Difficulty in walking and vague pains in upper and lower extremities

Physical examination Involuntary twitching of right upper extremity Hands and feet cold Pupils negative

Reflexes Knee jerks two plus, bilateral Babinski and ankle clonus Has pyramidal tract signs with consequently greatly increased reflexes

Wassermann test of blood negative
Spinal fluid cells seven, globulin negative, Wassermann test negative

Urological examination 5-6-35 Urgency of micturition and some incontinence Urine clear and negative. Residual urine varies from none to 130 c c Often cannot start the stream with 100 c c of urine in the bladder

Cystoscopy, 9-16-35 Moderate coarse trabeculation On the right lateral wall there is a moderate sized diverticular opening Definite elevation of the posterior lip of the sphincter in lower sector Median lobe elevation and slight enlargement of right lateral lobe intraurethrally

Cystometrogram, 5-20-35 2, 18,*54, SP92, MVP 110

Sphincterometry, 7-26-35 Internal 19 mm, external 12 mm

Remarks A case of true neurogenic hypertonia of the detrusor occurring in a case of spastic paraplegia (lateral column interference)

GROUP II Hypertonia non-neurogenica

L N, aged forty-six, white, male, admitted 4-12-35

Urological department, Diagnosis Vesical varicosities, verumontanitis, median bar

History Complains chiefly of frequency of urination, every two hours in day, about five times at night. No history of gonorrhea or syphilis

Examination Urine clear and normal, residual 30 c c. Prostate normal, secretion microscopically negative Radiograph of the GU Tract is negative Wassermann test negative.

Cystoscopy Marked varicosities on either lateral wall of the bladder adjacent to the trigone. Verumontanum is hypertrophic Elevation of the posterior lip of the internal sphincter

Cystogram Normal

Neurological examination Normal

Cystometry 2,4,4,10,*46, 50,50,46,P50,SP56, MVP 120

Sphincterometry Internal 12 mm, external, 21 mm

Remarks In this case there is great hypertonia of the detrusor This may overpower the normally toned sphincters and be the cause of the increased frequency of micturition

GROUP IV Hypotonia non-neurogenica

F K, aged fifty-two, white, male, admitted 12-24-34

Urological department Diagnosis Chronic cystitis

History Attacks of right loin pain Dysuria Terminal hematuria Urine slightly blood tinged

Cystoscopy, 1-2-35 Cystitis, Right ureteric orifice reddened, looking as if the patient had recently passed a ureteral stone Right and left urines negative Indigocarmine shows diminished function on both sides but chiefly on the right side. Wassermann test negative

Neurological examination, 5-24-35 Negative

Cystometry, 5-8-35 First, urine slightly turbid, second, urine clear No residual urine 0,1,1,*1,2, 2,2,4,5,6, 8,10,12,SP18, MVP 60

8-7-35 Radiography of the GU tract shows an opaque shadow in the left renal region, which appears to be extra-urinary

Sphincterometry, 9-13-35 Internal 20 mm, external 20 mm

GROUP V Hypotonia neurogenica.

R.R, aged thirty-eight, white, male, admitted 4-19-35

Neurological department, Diagnosis Tabes dorsalis, Optic nerve atrophy

History Had a chancre twelve years ago Complains of color-blindness and amblyopia. Is gradually losing his sexual power For a year has had enuresis practically every night Can not start the stream of urine unless he squats down and bends forward, thus increasing the intra-abdominal pressure

Physical examination Eyes—Argyll-Robertson pupils Fundi show optic nerve atrophy Vision—OD is 5/200 OS is 6/200 Romberg sign positive Westphal positive Paresthesia and some anesthesia below the knees Wassermann 3+, Kahn 4+ Urine cloudy with pus, residual urine is 350 to 500 c c on several examinations

columns of the cord Just as in those cases all inhibition is diminished or completely interfered with and we obtain increased knee-jerks and ankle clonus of greater or less degree, we have *similar signs in the bladder* Either, as Watts suggests, the centers in the brain that affect bladder control are damaged as in brain tumor, or the control is not transmitted due to pathological changes in the lateral tracts

Such types occur in spastic paraplegia, Parkinson's disease, hemiplegia, disseminated sclerosis, amyotrophic lateral sclerosis, etc We consider them true neurogenic hypertonias (Group I) and have studied fifteen cases, and during the same period of time have had thirty-two cases of non-neurogenic hypertonia

These cases are easily differentiated from the normal The true neurogenic hypertonias (Group I) rarely have a capacity of more than 200 c.c., or four increments The curve rises rapidly after the first fifty c.c., developing a pressure of about thirty-three mm., which is higher than the normal bladder develops at 600 c.c., this is due to irritability and spasm and at this point (100 c.c.) they develop desire to void (*) In the third space (150 c.c.) they develop pain (P) and higher pressure (about 56 mm.), in the fourth space (200 c.c.) they have severe pain (SP) and very high pressure (62 mm.) and in most cases will not tolerate further distension All of their sensory points are moved markedly to the left, as compared with the normal

But there are a greater number of cases of vesical hypertonia, which develop hypertonic curves even toward the middle or end of the first frame, in which the detrusor tonus rises in the second frame rapidly to nearly forty mm., these usually tolerate distension to not more than 350 or 400 c.c. These are hypertonias, but they have normal or fairly normal sensory points The neurologists can find nothing in them to indicate neurologic pathology They are non-neurogenic hypertonias (Group II) in which the increased detrusor tonicity is probably due to local causes

These non-neurogenic hypertonias must be differentiated from the true neurogenic types, and it can be done by ascertaining the sensory points with accuracy

Some of the cases in Group II are not

as markedly hypertonic as the true neurogenic hypertonias in Group I, but they cannot be confused with the normals in Group III, if they are tested with a standardized cystometer, like the one used in making these studies

Method of Using Chart (Table I)

In the normal cystometrogram (Group III) the sensory points are in spaces 4, 8, and 10 respectively

In Group I they are found in spaces 2, 3, and 4 respectively, being markedly moved to the left

The opposite of Group I is Group V In this latter group they are found in spaces 10, 13, and 16 respectively, being markedly moved to the right

Such criteria will separate very exactly true or neurogenic hypertonia and hypotonia from the normal But they will not separate neurogenic hypertonia and neurogenic hypotonia from a large group of hypertonias and hypotonias, which have no true neuropathologic changes in the brain or cord, but still show hypertonic and hypotonic detrusors (Group II or IV)

In Group II the sensory points are in spaces 4, 7, and 9 This is also practically identical with the normal (Group III), and certainly is far removed from that which occurs in true neurogenic hypertonia (Group I)

In Group IV the sensory points are in spaces 6, 8, and 10 This is also practically identical with the normal (Group III), and far removed from that which occurs in true neurogenic hypotonia

In other words, hypertonic and hypotonic detrusors which have normal or fairly normal sensory points are non-neurogenic This is borne out by the fact that neurologic examination fails to reveal symptoms and signs indicative of pathologic change in the brain or spinal cord

In addition to the case history of the normal case in Group III, which has already been outlined, there are here added four case histories † giving a typical case in each of Groups I, II, IV, and V

† We wish to express our appreciation of the cooperation and the use of material that we have received from our colleagues, Drs P W Aschner, Joseph Lebenstein, A J Rongy, and Charles Rosenheck, heads of the departments of Urology, Syphilology, Gynecology, and Neurology respectively

Discussions

DR. ERNEST L. BRODIE, *Buffalo*—Dr Simons is to be complimented on this excellent presentation. His cystometer and its companion the sphincterometer open the way for a more detailed study of vesical physiology

Many cystometers have been described, we have used one devised by Stephenson, physicist of the Buffalo City Hospital. It is a mercury type instrument and for clinical use may be adjusted to the level of the symphysis or it may be levelled in the manner of Simons

Our investigation has been limited to a study of the detrusor muscle and its innervation in central nervous system lues. In a recent series of twenty-four cases of asymptomatic neurosyphilis, sixteen showed evidence of neurogenic dysfunction of the bladder. Inasmuch as these bladders were compensated as evidenced by the absence of symptoms and residual urine, we have chosen to designate this group as preclinical neurogenic bladders. The following case is an excellent example of the type encountered

White, male, age thirty-eight. Chancre in 1916, has received treatment for the past five years. Spinal Wassermann positive, no residual urine or urinary complaints. *Cystoscopy*. A few fine trabeculations in retrotrigonal area. *Cystometrogram*. Preclinical neurogenic bladder (Fig 1)

Further impetus to this investigation was given when a case was selected at random from the wards to demonstrate cystometry. It is presented herewith

White, male, age thirty-eight. The only complaints and findings are referable to a

right ureteral calculus. In addition he gives a history of a soft chancre in 1924. Never has received antiluetic therapy. The blood Wassermann is positive as is the spinal fluid, which was checked after the cystometric examination. *Cystoscopy*. Cystitis (and right ureteral calculus). *Cystometrogram*. Preclinical neurogenic bladder (Fig 2)

May we emphasize that routine neurologic examination was entirely negative in the two preceding cases. Cystometry gave the first evidence of actual neuropathology. In view of these experiences we now plan to study cystometrically all cases of syphilis admitted for spinal fluid examination

That neurogenic bladders undergo phases of compensation and decompensation is well illustrated by the following cases

White, male, age forty-three. Admitted to the Buffalo City Hospital on February 5, 1935 with an intraperitoneal rupture of the bladder. The postoperative course was uneventful, except that on removal of the catheter he was unable to void. Blood and spinal Wassermann were positive, denies a primary lesion. On March 27, residual urine was 200 c.c., fourteen days later seventy-five c.c. In December, he was admitted for malarial therapy

On April 11, 1936 he was readmitted because of difficulty in starting urinary stream. Residual urine 200 c.c. A cystometric study (Fig 3) was made one week later, it showed a neurogenic bladder

The next case too has urinary retention as a feature

White, male, age thirty-eight. Admitted to Surgical Service with a fracture of the left fibula. Denied all urinary complaints prior to accident. Since admission had developed difficulty in voiding, one week later he was unable

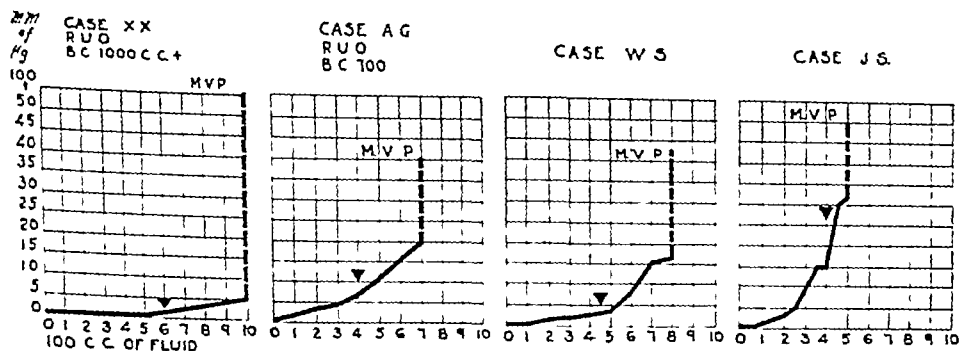


Fig 1 Residual urine, none. First desire to void 600 c.c. Bladder capacity 1000 c.c., ran in readily, discontinued at this point, no sensation of over distension. Maximum voluntary pressure 100 mm. of mercury. Fig 2 Residual urine, none. First desire to void 400 c.c. Bladder capacity 700 c.c. Maximum voluntary pressure 40 mm. of mercury. Preclinical neurogenic bladder. Fig 3 Residual urine, none. First desire to void, 450 c.c. Bladder capacity, 800 c.c. Maximum voluntary pressure 39 mm. of mercury. Fig 4 Residual urine, complete retention. First desire to void 400 c.c. Bladder capacity 600 c.c. Maximum voluntary pressure 49 mm. of mercury.

Cystometry, 5-1-35 0,0,1,2,2, 3,4,4,4,6, 6,7,8,*10,10, P12,16,SP18, MVP 132

Sphincterometry, 7-3-35 Internal 16, external 20 mm

Remarks An infected bladder with greatly increased capacity and diminished sensation. Sphincteric tonus within normal limits. A typical case of tabes dorsalis (posterior column interference) with neurologic hypotonia of the detrusor. The enuresis may be really a paradoxical incontinence as occurs with vesical neck obstruction of local organic cause, or as in this case interference with detrusor action and a vesical outlet which is apparently normal both anatomically and physiologically.

Conclusions

1 Cystometry is a method of physiologically evaluating the tonus of the detrusor which is directly governed by the autonomic nervous system, and indirectly controlled by the higher nervous centers.

2 By filling the bladder with consecutive equal increments of fluid and recording the pressure as each increment is injected, utilizing for this purpose an accurately standardized instrument, a numerical or graphic record of detrusor-tonus may be made and a hypertonic or hypotonic detrusor may be differentiated from the normal.

3 It is of paramount importance to elicit the sensory points, namely, "desire to void" (*), "pain" (P), and "severe pain" (SP), during the fractional filling of the bladder and to insert them into the record.

4 There is a norm of detrusor-tonus, its limits do not vary greatly.

5 The addition of the sensory points to the manometric record of the detrusor made with the Microcystometer, using the above described technic, makes it pos-

sible to differentiate true or neurogenic from false or non-neurogenic hypertonia, and true or neurogenic from false or non-neurogenic hypotonia.

6 Hypertonic or hypotonic detrusors which have normal or approximately normal sensory points are non-neurogenic.

7 Certain cases are found in which the mercury readings can be correlated exactly with hypertonia or hypotonia, but the sensory points do not agree. These are *mixed cases* and may eventually form an additional group to the five groups that we describe.

8 There is reason to believe that in certain types of luetic infection the bladder function may be affected due to the fact that the disease itself is acting directly on the autonomic nervous system long before the brain or the cord is attacked. The Microcystometer will detect these slight changes and may thus result in an early diagnosis of involvement of the nervous system.

9 There is reason to believe conversely that even in some cases with advanced cord and brain lesions and neurogenic bladders, the bladders may be cured by proper treatment. This is important as pyelonephritis is the cause of most deaths in these patients. This progress can also be followed by Microcystometry.

10 Dysurias may be obstructive, neurogenic or of combined type.

11 Microcystometry furnishes us with a physiological approach to the bladder and checks and augments cystoscopic or anatomic diagnosis of neurogenic bladder.

12 Cystometry has now been so simplified and standardized that its adoption by the profession as a routine procedure need no longer be deferred.

114 E. 54 St
154 W. 94 St

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Discussions

DR. ERNEST L. BRODIE, *Buffalo*—Dr Simons is to be complimented on this excellent presentation. His cystometer and its companion the sphincterometer open the way for a more detailed study of vesical physiology.

Many cystometers have been described, we have used one devised by Stephenson, physicist of the Buffalo City Hospital. It is a mercury type instrument and for clinical use may be adjusted to the level of the symphysis or it may be levelled in the manner of Simons.

Our investigation has been limited to a study of the detrusor muscle and its innervation in central nervous system lues. In a recent series of twenty-four cases of asymptomatic neurosyphilis, sixteen showed evidence of neurogenic dysfunction of the bladder. Inasmuch as these bladders were compensated as evidenced by the absence of symptoms and residual urine, we have chosen to designate this group as preclinical neurogenic bladders. The following case is an excellent example of the type encountered.

White, male, age thirty-eight. Chancre in 1916, has received treatment for the past five years. Spinal Wassermann positive, no residual urine or urinary complaints. *Cystoscopy*. A few fine trabeculations in retrotrigonal area. *Cystometrogram*. Preclinical neurogenic bladder (Fig 1).

Further impetus to this investigation was given when a case was selected at random from the wards to demonstrate cystometry. It is presented herewith.

White, male, age thirty-eight. The only complaints and findings are referable to a

right ureteral calculus. In addition he gives a history of a soft chancre in 1924. Never has received antiluetic therapy. The blood Wassermann is positive as is the spinal fluid, which was checked after the cystometric examination. *Cystoscopy*. Cystitis (and right ureteral calculus). *Cystometrogram*. Preclinical neurogenic bladder (Fig 2).

May we emphasize that routine neurologic examination was entirely negative in the two preceding cases. Cystometry gave the first evidence of actual neuropathology. In view of these experiences we now plan to study cystometrically all cases of syphilis admitted for spinal fluid examination.

That neurogenic bladders undergo phases of compensation and decompensation is well illustrated by the following cases.

White, male, age forty-three. Admitted to the Buffalo City Hospital on February 5, 1935 with an intraperitoneal rupture of the bladder. The postoperative course was uneventful, except that on removal of the catheter he was unable to void. Blood and spinal Wassermann were positive, denies a primary lesion. On March 27, residual urine was 200 c.c., fourteen days later seventy-five c.c. In December, he was admitted for malarial therapy.

On April 11, 1936 he was readmitted because of difficulty in starting urinary stream. Residual urine 200 c.c. A cystometric study (Fig 3) was made one week later, it showed a neurogenic bladder.

The next case too has urinary retention as a feature.

White, male, age thirty-eight. Admitted to Surgical Service with a fracture of the left fibula. Denied all urinary complaints prior to accident. Since admission had developed difficulty in voiding. One week later he was unable

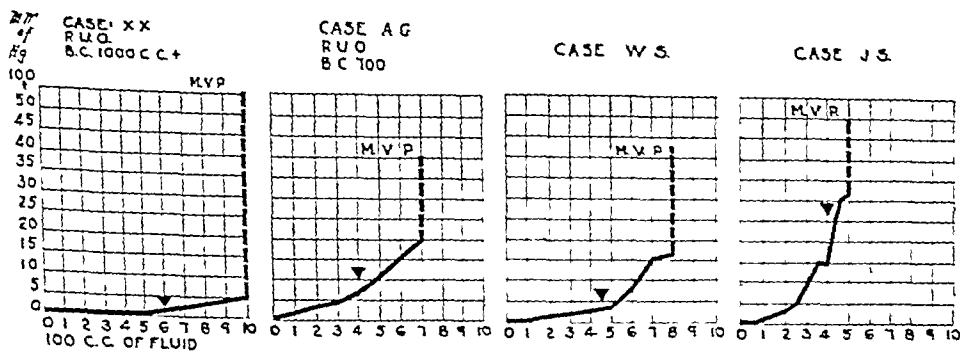


Fig 1 Residual urine, none. First desire to void 600 c.c. Bladder capacity 1000 c.c., ran in readily discontinued at this point, no sensation of over distension. Maximum voluntary pressure 100 mm. of mercury. Fig 2. Residual urine, none. First desire to void 400 c.c. Bladder capacity 700 c.c. Maximum voluntary pressure 40 mm. of mercury. Preclinical neurogenic bladder. Fig 3. Residual urine, none. First desire to void, 450 c.c. Bladder capacity, 800 c.c. Maximum voluntary pressure 39 mm. of mercury. Fig 4. Residual urine, complete retention. First desire to void 400 c.c. Bladder capacity 600 c.c. Maximum voluntary pressure 49 mm. of mercury.

Cystometry, 5-1-35 0,0,1,2,2, 3,4,4,4,6, 6,7,8,*10,10, P12,16,SP18, MVP 132

Sphincterometry, 7-3-35 Internal 16, external 20 mm

Remarks An infected bladder with greatly increased capacity and diminished sensation. Sphincteric tonus within normal limits. A typical case of tabes dorsalis (posterior column interference) with neurologic hypotonia of the detrusor. The enuresis may be really a paradoxical incontinence as occurs with vesical neck obstruction of local organic cause, or as in this case interference with detrusor action and a vesical outlet which is apparently normal both anatomically and physiologically.

Conclusions

1 Cystometry is a method of physiologically evaluating the tonus of the detrusor which is directly governed by the autonomic nervous system, and indirectly controlled by the higher nervous centers.

2 By filling the bladder with consecutive equal increments of fluid and recording the pressure as each increment is injected, utilizing for this purpose an accurately standardized instrument, a numerical or graphic record of detrusor-tonus may be made and a hypertonic or hypotonic detrusor may be differentiated from the normal.

3 It is of paramount importance to elicit the sensory points, namely, "desire to void" (*), "pain" (P), and "severe pain" (SP), during the fractional filling of the bladder and to insert them into the record.

4 There is a norm of detrusor-tonus, its limits do not vary greatly.

5 The addition of the sensory points to the manometric record of the detrusor made with the Microcystometer, using the above described technic, makes it pos-

sible to differentiate true or neurogenic from false or non-neurogenic hypertonia, and true or neurogenic from false or non-neurogenic hypotonia.

6 Hypertonic or hypotonic detrusors which have normal or approximately normal sensory points are non-neurogenic.

7 Certain cases are found in which the mercury readings can be correlated exactly with hypertonia or hypotonia, but the sensory points do not agree. These are *mixed cases* and may eventually form an additional group to the five groups that we describe.

8 There is reason to believe that in certain types of luetic infection the bladder function may be affected due to the fact that the disease itself is acting directly on the autonomic nervous system long before the brain or the cord is attacked. The Microcystometer will detect these slight changes and may thus result in an early diagnosis of involvement of the nervous system.

9 There is reason to believe conversely that even in some cases with advanced cord and brain lesions and neurogenic bladders, the bladders may be cured by proper treatment. This is important as pyelonephritis is the cause of most deaths in these patients. This progress can also be followed by Microcystometry.

10 Dysurias may be obstructive, neurogenic or of combined type.

11 Microcystometry furnishes us with a physiological approach to the bladder and checks and augments cystoscopic or anatomic diagnosis of neurogenic bladder.

12 Cystometry has now been so simplified and standardized that its adoption by the profession as a routine procedure need no longer be deferred.

114 E. 54 St
154 W. 94 St

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LATE RESULTS IN SIXTY-THREE CASES OF POLIOMYELITIS TREATED IN THE RESPIRATOR

M BERNARD BRAHDY, M D, *Mount Vernon*

Visiting Physician, Willard Parker Hospital, New York City,

*From the Willard Parker Hospital and the Department of Pediatrics,
Cornell University Medical College*

The respirator devised by Drinker and his coworkers¹ has proven its value during the short period of time we have had this ingenious apparatus for artificial respiration. The results of respirator treatment have been reported by various observers.² These reports deal primarily with such topics as the type of patients who may benefit from respirator treatment, how soon after the appearance of respiratory difficulty treatment should be started, and the percentage of treated patients who survive the acute stage of the disease. No data have been presented to show what happens to the patients several years after respirator treatment. With the assistance of Dr Lenarsky I have collected such data during the last 4½ years. I shall present to you our mortality rate, our late functional results, and the pulmonary complications which we found in our patients, as long as two and a half years after recovery from their respiratory failure.

Sixteen hundred and thirty-two patients with poliomyelitis were admitted to the Willard Parker Hospital from January 1931 to December 1933. Sixty-three of these patients (about 4 per cent) received respirator treatment. Our indications for this treatment were stringent. Patients with slight or moderate difficulty in breathing were not treated in the respirator. The patients we treated had marked respiratory difficulty and artificial respiration was a necessity. This necessity was evidenced by irregular shallow breathing, marked dyspnea, prolonged restlessness, fatigue or persistent cyanosis. The reasons for selecting patients for respirator treatment on this basis have been discussed elsewhere.³ I mention it here only to point out that with our stringent indications for treatment the mortality rate will be higher, than if all

patients with respiratory embarrassment received respirator treatment.

We have not been successful in the treatment of patients having bulbar lesions with paralysis of the respiratory center. We treated twelve such cases in 1931 and all died during treatment. Discouraging results with similar cases have been reported by others.² In 1932 and 1933 bulbar cases were not treated in the respirators. Patients with paralysis of the intercostal muscles or of the diaphragm were classified as spinal cases as far as their respiratory difficulty was concerned. There were fifty-one such cases treated with twenty-four deaths during treatment and twenty-seven recoveries, a mortality rate of forty-seven per cent (Table I). The cases to be discussed here are those of the twenty-seven patients whom regained sufficient respiratory function to permit discharge from the hospital.* Follow-up investigations over a period of 4½ years showed that thirteen of these twenty-seven patients died from nineteen days to 2½ years after their respirator treatment. With the exception of one patient who died of neutropenia the fatal illness in these patients was a respiratory condition, which in eleven was diagnosed clinically as pneumonia and in one as pulmonary edema. Two of these patients had roentgenograms taken and these showed that one patient had a massive atelectasis and the other a pneumothorax (later complicated by pneumonia). The other ten patients died without roentgenologic substantiation of their clinical diagnosis. In several instances the history and

* There was one exception to this. The patient had regained some of his respiratory function and was removed from the respirator to make room for a more urgent case. He was transferred to another hospital where a respirator was available for further treatment.

to void and an indwelling catheter was inserted. Blood Wassermann positive, spinal fluid secured after the cystometrogram was also positive. *Cystoscopy* Cystitis Cystometrogram secured three weeks after insertion of indwelling catheter showed a neurogenic bladder (Fig 4). In view of the type of curve obtained, catheter was removed. The patient now voiding. There is no residual urine. A cystometric study a few days later demonstrated a flatter curve with the first desire to void at 450 c.c. (11 mm of mercury), a maximal capacity of 600 c.c. (20 mm of mercury) with a maximum voluntary pressure of 71 mm. of mercury.

We feel that all cases of neurosyphilis irrespective of urinary symptoms should be studied cystometrically. It has been our experience that it would demonstrate impairment of innervation before routine neurologic and urologic examinations have revealed any pathology. Positive findings in asymptomatic cases are certainly an indication for careful therapy. In addition, any urologic factor which might engender bladder decompensation must be under strict surveillance.

But one field of cystometry has been discussed, undoubtedly it has a steadily growing field not only in the clinical, but in physiologic and pharmacologic studies.

DR. JOSEPH LEBENSTEIN, *New York City*—During the past one year and a half

I have watched with great interest the cystometric and sphincterometric studies made by Drs Simons and Bisher in the Urological department of the Hospital for Joint Diseases.

Of greatest interest has been the fact that in my department of Syphilology we have seen cases in which, although there was clinically no definite proof of cerebro-spinal luetic development, yet cystometric studies seemed to show involvement of the autonomic nervous system.

From this it looks probable that in some cases we will be able to make a diagnosis of involvement of the nervous system before the posterior root ganglia are involved.

We have had a number of most unusual experiences in cases of posterior column involvement, such as tabes dorsalis, in which cystometric readings show the usual hypotonia neurogenica and hyposensitiveness of the bladder. After an amount of treatment which we would not consider sufficient to stay the disease under ordinary circumstances, these cases were checked by cystometry again and we were very interested to learn that some of the hypotonic bladders had become normal or even slightly hypotonic and that the residual urine had diminished or disappeared and finally that sensation had become normal.

GOVERNOR LANDON ON SOCIALIZED MEDICINE

Medical journals around the country are quoting a passage dealing with socialized medicine in the address of Governor Alf M. Landon, delivered before the opening session of the American Medical Association at Kansas City. It met with appreciative applause. We quote in part:

Medicine will not willingly be made the servile instrument of politicians or the instrument of domineering bureaucracy. I predict that the typical American physician and organized medicine as a whole will at no time be ready for any scheme of regimentation, for any system of impersonalized medicine which is totally alien to the best traditions of the American practitioner and of the profession as a whole.

The American practitioner will not be a party to destruction of that individual, personal service which has been the occasion of a special and justifiable pride. Whatever further advances are made in the broadening of medical service—there will be an abundance of them—will be made, in accordance with the fundamental conditions of previous achievements.

A nation that can maintain and even elevate its medical standards and the state of public

health in the trying years of a prolonged depression, needs to make no apology for the quality and the reach of its medical facilities.

That condition itself is a tribute to the American physician in his continued unselfish devotion to a worthy task. May you long abide in your loyalty to the ideal of individual, personal ministrations.

From the earliest days the general practitioner in America was, first of all, an individualist. The circumstances of his work made him that, but it was a fortunate situation for the people who needed medical care. It meant that they could have personal ministrations, that there was an intimate relationship between physician and patient and that the sufferer became at once, and remained, the object of very special attention.

Down to the present day American medicine has continued to be primarily individualistic. It is chiefly on that basis that it is to be distinguished from medicine in many foreign countries. I know very well the arguments for an extension of the best medical service to all groups of the American people. It is a worthy cause. It is enlisting the attention of the best brains of your profession. I have confidence that you will work it out.

Three nursing organizations of New York State will meet in joint convention on October 12-16 at the Hotel Pennsylvania, New York City.

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Sixteen hundred and thirty-two patients with poliomyelitis were admitted to the Willard Parker Hospital from January 1931 to December 1933. Sixty-three of these patients (about 4 per cent) received respirator treatment. Our indications for this treatment were stringent. Patients with slight or moderate difficulty in breathing were not treated in the respirator. The patients we treated had marked respiratory difficulty and artificial respiration was a necessity. This necessity was evidenced by irregular shallow breathing, marked dyspnea, prolonged restlessness, fatigue or persistent cyanosis. The reasons for selecting patients for respirator treatment on this basis have been discussed elsewhere.³ I mention it here only to point out that with our stringent indications for treatment the mortality rate will be higher, than if all

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clinical course simulated that of patients with massive atelectasis, which I shall discuss later. They had a history of an upper respiratory infection with an unproductive cough, complicated by sudden respiratory distress and cyanosis. Artificial respiration, administration of oxygen, and other treatment was without effect and the illness was rapidly fatal. It seems likely that in some of these patients the correct diagnosis was massive atelectasis.

TABLE I—ANALYSIS OF 63 CASES OF RESPIRATORY FAILURE TREATED IN RESPIRATORS

Year	Type of lesion	Number treated	Died during respirator treatment	Died after discharge	Total deaths	
					Number	Percent
1931	Bulbar	12	12		12	100
1931	Spinal	34	16	10	26	76
1932-33	Spinal	17	8	3	11	65
	Total	63	36	13	49	

Massive atelectasis as a complication of poliomyelitis has been practically unrecognized. In 1910 Regan reported a case with massive atelectasis at the onset of poliomyelitis in a ten year old girl.⁴ At first the diagnosis of pneumonia was made but after three days it was obvious that the patient had poliomyelitis and atelectasis of the left lower lobe. A few days later there was also an atelectasis of the right upper lobe. The occurrence of massive atelectasis in patients treated in the respirator was reported by Brahdny and Lenarsky several years ago.⁵ The only other case in the literature is one reported by Smith in 1933 which occurred one and a half years after respirator treatment.⁶ A postmortem examination revealed a mucopurulent plug obstructing a bronchus of the atelectatic lung.

Massive atelectasis developed in two of our patients during respirator treatment and in four after they were discharged from the hospital.

Our first case occurred in 1931 in a twelve year old boy. He developed a mild pharyngitis with a weak ineffectual cough on his tenth day in the respirator. The cough persisted and after four days he complained of pain in the right side of his chest. A roentgenogram at this time showed a density in the right upper lobe with a sharply defined lower border. On physical examination

it was found that the upper part of the chest on the right side was flattened in appearance and over this area there was impaired resonance, diminished breath sounds, and moist rales. The patient was restless and slightly cyanotic for one day, but then improved rapidly and the physical signs gradually disappeared. The temperature was under 100° F during the entire respiratory episode.

The second patient who developed massive atelectasis during respirator treatment was a seven year old boy with a Fröhlich syndrome admitted in December 1933. He had a quadriplegia in addition to extensive paralysis of the back muscles, intercostal muscles, and diaphragm. A month after respirator treatment was begun and while he was still in the respirator he complained of a sore throat. He coughed but was unable to bring up anything. Two days later he complained of pain in the upper part of his chest on the left side. At this time there was dullness and the breath sounds absent over the upper anterior part of the chest on the left side. A roentgenogram confirmed the clinical diagnosis of atelectasis. Five days later the percussion note and breath sounds were normal. The highest temperature was 100.6° F and this occurred on the first day the patient complained of a sore throat.

Four of the twenty-seven patients who were discharged from the hospital developed massive atelectasis three weeks, one month, three months, and eighteen months respectively after treatment. There was considerable similarity in the history and clinical features in each case. The patient had a cold or cough for a few days and this was suddenly complicated by marked respiratory distress associated with cyanosis. The temperature elevation varied from one to four degrees. The physical signs were similar to pneumonia with the exception of a shift of the mediastinum toward the affected side. The extent of the displacement of the mediastinum varied according to the amount of lung which was atelectatic. The duration of the illness in the patients who survived varied from a few days to two weeks. A blood count in one patient at the onset of his acute symptoms showed a normal total leukocyte count with a slight shift to the left.

Several years ago, through the courtesy of Dr. Higgons of Port Chester, I saw a twelve year old girl with extensive paraly-

sis including the respiratory muscles. She received respirator treatment for seven weeks. After convalescing at home for a month she contracted a mild upper respiratory infection and experienced difficulty in clearing the mucus from her throat. Four days later marked respiratory difficulty and cyanosis developed. Roentgenograms revealed atelectasis of the entire left lung with the mediastinum drawn toward the left side. After three weeks she recovered and returned to her home. During the next two months the convalescence was uneventful. Then she contracted another upper respiratory infection with recurrence of the massive atelectasis of the entire left lung. She recovered after a stormy course. Since that time (4 years ago) she has had no further pulmonary complications. At present the patient is in Southern California.

Massive atelectasis is the result of prolonged occlusion of the lumen of a large bronchus. Several factors were present in our patients which predisposed them to such an occurrence. There was an intercurrent upper respiratory infection which increased the production of mucus. The ability to cough was decreased, because some of the respiratory muscles were still paralyzed.

It seems probable that the following chain of events occurred in these patients: a mixture of mucus and bronchial secretions accumulated in the large bronchi because the patients were unable to cough hard enough to dislodge it. The to and fro movement of the tidal air dried this accumulated intrabronchial material making it more tenacious. This tenacious material finally plugged up a bronchus, or many of its subdivisions, and atelectasis followed.

Diagnosis

The clinical diagnosis of massive atelectasis is difficult even when its presence is suspected. The patient may or may not have fever. If fever is present, it usually subsides in a few days unless there is some complication. When atelectasis develops rapidly the patient experiences difficulty in breathing and becomes cyanotic, the severity depending upon how much of the lung is involved and whether there are other factors present which interfere with respiration. The thoracic movements are decreased or absent, and the chest wall is flattened on the atelectatic side. Diminished movement of the

abdominal wall may be observed on the affected side especially when the lower lobe is involved. Over the affected portion of the lung there is dullness and the breath sounds may be diminished or absent. The character of the breath sounds may vary from normal to bronchial, probably depending upon the patency of an adjacent large bronchus. Moist rales and some sibilant rales were present in our patients. Physical signs in other parts of the lung were those of emphysema associated with coarse moist rales. The mediastinum is drawn toward the affected side as indicated by the displacement of the trachea, the apex beat, and the area of cardiac dullness.

Roentgenologic examination is essential to confirm the diagnosis. The atelectatic lung is less transparent than the normal lung and throws a shadow on the roentgenogram. The shape of the shadow which results depends upon whether an entire lobe or part of a lobe is involved. The upper lobe casts a less characteristic shadow than the lower lobe. If the entire lower lobe is atelectatic, it casts a triangular shadow, the mesial border and inferior border of which are indistinguishable from the shadows of the spine and the diaphragm. The mesial portion of the shadow of the right lower lobe is partly obscured by the cardiac shadow because the heart and adjacent structures are drawn toward the involved lung. The shadow of the left lower lobe may be entirely within the cardiac shadow. The lateral border of the triangular shadow extends from the hilus to a variable point on the diaphragm. The intercostal spaces are narrowed and the diaphragm is elevated on the involved side, especially when the lower lobe is atelectatic. Fluoroscopy may reveal immobility of the diaphragm on the affected side.

General Condition of Survivors

The fourteen patients who are alive today have been examined at intervals since their respirator treatment. At the last examination three were bed patients, four could get around in wheel chairs during the day, and seven were up and about. The three bed patients have good respiratory function but due to residual paralysis of the upper extremities they cannot manipulate a wheel chair. Each of

them has paralysis of one or both lower extremities and two have marked scoliosis. The four wheel chair patients have sufficient strength in their upper extremities to move the chair, feed themselves, and turn pages of a book. One of them can walk a little with the aid of crutches. The respiratory function of these patients is diminished as a result of residual paralysis of some of the intercostal muscles. One of the patients had an appendectomy under inhalation anesthesia followed by an uneventful recovery. The operation was performed three and a half years after his respiratory treatment. It is interesting that one month after respirator treatment this patient developed massive atelectasis from which he recovered after a stormy course.

Among the seven patients who are up and about, active, alert, and attending school, there are three with scoliosis and atrophy of some of the muscles of the shoulder, arms, and upper thorax, one has a slight weakness of the abdominal muscles and some atrophy of the left deltoid but no limitation of motion, one has a unilateral weakness of the lower facial muscles and soft palate, and two have no residual paralysis. The respiratory function of these seven patients is good.

Comment and Summary

Respiratory paralysis is a serious complication of acute anterior poliomyelitis. When only those patients with marked respiratory distress receive respirator treatment the mortality rate during treatment is high. In the present series of sixty-three cases the mortality rate during treatment was one hundred per cent in the bulbar cases and forty-seven per cent in the spinal cases. Follow-up investigations of patients who were discharged from the hospital revealed that nearly half of them (12 out of 27) died from

a respiratory complication. Attention is called to the frequent occurrence of massive atelectasis in our patients. This condition may be mistaken for pneumonia or massive pleural effusion unless careful physical examination is made and roentgenograms are taken.

Most of the patients with respiratory failure have extensive involvement of the skeletal muscles. Those who survive the acute stage of the disease usually have residual paralysis which incapacitates them. Seven of the patients in the present series are either bedridden or are greatly limited in their physical activities. However, the other seven patients who are alive today are well enough to attend school and two of them have no residual paralysis whatsoever.

Although this report seems discouraging at first glance we should not lose sight of the two children who are entirely well and of the patients who regained sufficient muscle power to attend school and play again. Their chances of survival without respirator treatment were not good. The respirator is a relatively recent addition to our armamentarium. To obtain better results with our respirator cases necessitates improvements in the machine and in our technic of using it. In addition, we need more information about the late pulmonary complications in patients treated in respirators. Based upon such data efforts can be made to devise measures to prevent the fatalities.

531 E. LINCOLN AVE.

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District Branch Meetings

The Annual Meetings for 1936 have been arranged on the following schedule:

September 17, Thursday—Sixth District Branch—*Ithaca*.

September 22, Tuesday—Third District Branch—*Albany*.

September 24, Thursday—Seventh District Branch—*Willard*.

October 1, Thursday—Fifth District Branch—*Rome*.

October 2 and 3, Friday and Saturday—Fourth District Branch—*Plattsburgh*.

October 7, Wednesday—First District Branch—*Morrisania Hospital, New York City*.

October 15, Thursday—Eighth District Branch—*Buffalo*.

November 19, Thursday—Second District Branch—*Garden City*.

THE TREATMENT OF BRONCHIAL ASTHMA BY INTRA-TRACHEAL INJECTIONS OF IODIZED OIL

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In 1932,¹ the author reported sixty cases of bronchial asthma treated by intratracheal injections of iodized oil in which the results were very satisfactory. Since that report was published two hundred additional cases have been completed, or a total of 260. The group is now sufficiently large and has been under observation long enough to determine the value of this method of treatment.

The patients were nearly all of the chronic type who had tried the usual methods with little or no relief. With the exception of very young children, they were unselected as to age, duration of condition, or etiological factors. With few exceptions, the history of every patient showed the inherited asthmatic background. The oil was the only medication except adrenalin for the immediate relief of an attack.

A study of roentgenograms of the chests of patients with bronchial asthma taken after injections of iodized oil showed a partial or complete obstruction in the medium and smaller bronchi in a large majority of them. Singer,² in 1926, pointed out imperfect fillings of the tubes during an attack and Steinberg³ made the same observation in 1932. In the cases under discussion obstructions were observed also during the interval between attacks. They were not influenced by injections of adrenalin, but in nearly all cases disappeared after repeated injections. The conclusion that the obstructions in the lumen of the bronchial tubes were due to pathologic secretion seems justifiable. Steinberg³ reached the same conclusion after correlating roentgenologic observations with the autopsy findings in patients who died from allergic asthma. Pneumoconiosis, healed tuberculosis, atelectasis, and certain types of bronchitis also cause obstruction of the bronchial tubes, but are easily differentiated from pathologic secretion.

When the patency of the tubes was

established there was prompt relief in many cases which indicates a relation between the occluded bronchi and the asthmatic paroxysm. Steinberg³ is of the opinion that "an asthmatic paroxysm is essentially due to bronchial occlusion by mucus as a result of a hypersecretory activity of the bronchial mucous glands and the degree of the attacks is proportionate to the extent of mucous secretions and bronchial plugging." The plugging of the bronchial tubes interferes with free drainage and normal ventilation of the lungs. Toxic products, probably bacterial, are retained which act as an irritant and may contribute to the production of the asthmatic paroxysm.

The major objective of this treatment, therefore, is to remove the pathologic secretion by frequent injections of iodized oil until the patency of the tubes is restored.

Preliminary to the treatment, a thorough physical examination, a roentgenogram of the chest, and in some cases a bronchoscopic examination should be of each patient to eliminate those conditions which give rise to asthmatic symptoms but are not true bronchial asthma such as growths within or without the bronchi, enlarged tracheobronchial glands, enlarged substernal thyroids, and foreign bodies.

This treatment is contraindicated in cases complicated by acute tuberculosis, cardiorenal conditions, hyperthyroidism, aneurism, angina pectoris, and in debilitated persons.

Practically no preparation of the patient is required preliminary to the treatment. In very nervous patients, a sedative may be necessary preceding the first injection. One-eighth to one-quarter grain of morphine sulphate given hypodermically one-half hour before the injection will prove satisfactory. Subsequent use of a sedative is rarely necessary.

Lipiodol, iodized oil, is admirably suited

for the injections. It is a solution of forty percent, by weight, of iodine in poppy-seed oil. The iodine is fixed in the fatty molecule. This makes it relatively non-toxic and non-irritating, and may be retained in the lungs over long periods of time causing little, if any, inflammatory reaction. The fatty molecule is fragmented before the iodine is liberated. This takes place in the presence of air and heat, and the fat-splitting ferments in the tissues.⁴ Its absorption takes place from the bronchial mucosa and alveoli of the lungs and may be found in the urine six hours after it is injected into the tracheobronchial tree. After the iodine is absorbed or liberated, it stimulates the

bronchial secretory glands causing them to excrete large amounts of normal secretion which increases the fluid contents of the tubes. It dissolves the mucin in the secretion, renders it less viscid and more fluid, thus making possible its elimination by the bronchial drainage mechanism. It stimulates the bronchial mucosa, decreases congestion, absorbs exudates, and restores the normal circulation. The rapid decrease of the bacterial flora from the sputum indicates its bactericidal action.

It also is of value in forming a protective film over the surface of the mucosa, which prevents irritation by dust drying and the entrance of bacteria. Its high iodine content gives it a specific gravity much greater than the bronchial secretion. Immediately after injection, it gravitates to the most dependent portion of the tubes, dislodges and displaces the secretion upward into the large tubes, where it is eliminated by the cough reflex.

In order to successfully inject the oil into the bronchial tree, the swallowing and cough reflex at the bifurcation of the trachea must be completely abolished, otherwise the patient will swallow or cough up the oil. This is accomplished by spraying the pharynx and anterior and posterior pillars with a solution of two percent of nupercaine and injecting into the larynx two to three cc of a five percent solution. In most patients this produces complete anesthesia in five minutes. This solution has proved very satisfactory. It produces anesthesia quickly, and no toxic symptoms have been observed in more than five thousand injections. The oil should always be warmed to 110° before being used because if injected when cold, it may excite a cough reflex. The heat decreases its viscosity and enables it to flow more rapidly into the finer bronchioles. As a rule, it should be injected during the interval between attacks, but if given during an attack, an injection of adrenalin should first be given to relieve the spasm of the bronchial muscle and to reduce the edema of the mucosa. This enlarges the lumen of the tubes permitting the oil to flow into the finer bronchioles.

There are a number of methods of injecting the oil into the tracheobronchial tree and each has its merits. The trans-



Fig 1 Normal lung showing oil in the bronchial tube seven minutes after injection

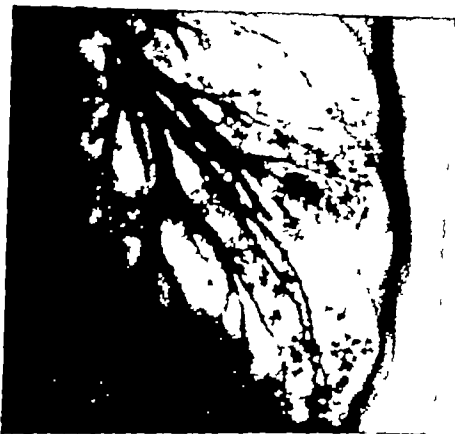


Fig 2 Magnified view of roentgenogram showing complete obstruction of bronchi. Between interval of attacks, thirty minutes after injection of ten m of adrenalin

glottic method has been found most satisfactory because it enables the operator to place the oil in any part of the lung. It does not traumatize the tissues. It requires no expensive instruments or trained assistants. A twenty c.c. metal syringe having a cannula six to eight inches long is the only instrument required.

If both lower lobes are to be injected, the patient is seated before the operator and instructed to grasp his tongue with a piece of gauze, and draw it forward as far as possible. This raises the larynx, and closes the upper end of the esophagus. The syringe containing the oil is held in the right hand of the operator. His left index finger is passed down to the epiglottis and the epiglottis brought forward. The tip of the cannula is guided along the finger to the glottis. The finger is withdrawn, and the oil is slowly injected while the patient breathes normally. When either of the lower lobes is to be injected the patient inclines his body to the right or left, when it is the upper lobe, the patient should lie upon a table and turn upon the side to be injected with his arm hanging over the edge, his head flexed forward and supported by an assistant. The oil is injected and the head of the table is dropped twenty degrees. He should remain in this position for at least five minutes. This allows the oil to gravitate into the upper lobes.

The first injection into any portion of the bronchial tree, should be given to determine the presence of obstruction in the tubes. The lower lobes should be selected first since they are the reservoirs into which the upper respiratory tract drains and it is in these lobes that stasis most frequently occurs.

A fluoroscopic or Roentgen ray examination of the lobe injected should be made immediately following the injection. If there is nothing to interfere with the flow of oil, it will reach the air vesicles in from seven to fifteen minutes and only a film of it will remain in the tubes so thin it is difficult to visualize. If it does not reach the vesicles within this time, complete or partial obstruction should be suspected. The obstruction may be due to a broncho-spasm, edema of the mucosa or to secretion (Fig 1).

In order to determine to which of these

it is due, ten minims of adrenalin should be injected and in thirty minutes a fluoroscopic examination made. If a broncho-spasm has retarded its flow, the adrenalin will have relaxed the spasm, or reduced the edema, and the oil will have flowed into the vesicles. If there is no change in its position, an occlusion is present, probably due to secretion. No obstructions can be seen in some cases because of superimposed shadows cast by parallel branches. If the oil does not reach the periphery of the lung or if there are areas which do not fill, it is evident that the finer bronchioles, which are not visible, are obstructed (Fig 2, 3).

A study of the walls should be made to determine the presence of bronchiectasis. The dilatation which occurs in bronchial asthma is usually not extensive. The normal tapering of the tubes is lost. They become straight, spindle-shaped, or cylindrical. Occasionally some varicosity can be observed. Large dilatations with bronchiectatic areas in which there was morning sputum and other evidence of stasis was found in less than three percent of the cases. Emphysema which is present in nearly all cases of chronic asthma has the appearance of bronchiectatic areas when injected with iodized oil.

After the expiration of one week, the opposite lower lobe should be injected and the same procedure followed. The interval between the injections affords ample time to note any reaction which may take place.

If there is complete or partial stenosis of the tubes, enough oil should be injected into the obstructed areas to maintain contact with the secretion. Ten to twenty c.c. is usually sufficient for one lobe. If both lower lobes are to be injected at the same time, which may be done after the initial injection, from twenty to thirty c.c. may be required. The amount to be injected at subsequent injections depends upon the rapidity with which the secretions are liquefied and dislodged, and the number of tubes obstructed. If the secretions are soft the oil will liquefy and displace them quickly, but if they are hard or partially calcified and adhere tenaciously to the bronchial mucosa, or many tubes are involved, a much longer time will be required to restore their patency.

The rate at which the oil disappears from the lung must be considered. If it does not pass into the vesicles soon after injection much of it will be expelled by the cough reflex within twenty-four hours. When this occurs, the injections may be given more frequently with safety. When it reaches the vesicles it is not affected by the cough reflex but remains until absorbed. The rate of absorption depends upon the activity of the fat-splitting ferments in the alveoli.⁴ This activity varies with the individual and at times in the same individual. Only sufficient oil should be injected to replace that which has disappeared. If more is injected the lung may become overloaded. At no time should the amount of oil in the lungs be sufficient to reduce the vital capacity more than fifty percent. Should this be exceeded, the attacks of asthma may increase in frequency and severity and extreme cyanosis may follow. A fluoroscopic examination should be made frequently during the course of treatment to determine the amount.

When the oil reaches the vesicles indicating that the tubes are free of secretion, the amount should gradually be reduced and the time between injections lengthened as the attacks of asthma become less frequent and less severe. If there is no improvement after several injections into the lower lobes and there is reasonable assurance that the oil has reached the vesicles, then the same procedure should be carried out with the middle and upper lobes except that only one lobe should be treated at a time. Treatment should not be discontinued for lack of relief until every portion of the bronchial tree has been washed out with the oil and the tubes are unobstructed unless some contraindication should arise (Fig 4).

The response to the treatment varies. Some patients obtain relief from attacks at once, in others there is gradual improvement, some do not show any improvement for many months and then relief may come suddenly or gradually. Generally speaking, young persons respond more quickly than those more advanced in years. Patients in whom asthma followed some infection of the respiratory tract such as bronchitis, measles, whooping-cough, influenza, or pneumonia, usually respond more slowly than those

in whom the attacks are precipitated by foods, odors, dust, pollens, danders, etc.

The following abbreviated case histories are illustrative.

CASE 1 J H., male, age fifteen, had frequent attacks of asthma and hay fever since three years old. Skin tests were positive to seventeen pollens. Ten injections of iodized oil were given into the right and left lower lobes during one year. The attacks of asthma and hay fever ceased after the third injection and he has had no recurrence in three years.

CASE 2 C S., male, age twenty-six, totally incapacitated by bronchial asthma for eleven years. Asthma followed influenza. He received thirty injections of the oil into the middle and lower right lobes during fourteen months. There was no improvement in six months, then the attacks abruptly ceased. He did not have asthma for seven years. Recently he had a tonsillectomy which was followed by an attack of asthma. He is being treated again and is responding satisfactorily.

CASE 3 T S., male, age six, had pneumonia when three years old followed by asthma which became progressively worse. The oil was injected every three weeks in the right middle lobe for one year. He gradually improved for six months when attacks of asthma ceased. He has not had a recurrence in five years.

CASE 4 Miss B A., age twenty, semi-invalid because of bronchial asthma for thirteen years which followed bronchitis. She received thirty injections of the oil in eighteen months. The asthma improved fifty percent the first six months and the improvement stopped. The oil had all been injected into the lower lobes. During the next six months the right and left upper lobes were injected. In six months the attacks ceased. She was free from attacks for eight years.

CASE 5 Miss E G., age sixty-three, ill two-thirds of the time with bronchial asthma for forty-eight years. For two and one-half years she was given injections of the oil into the lower lobes. Gradual improvement followed. In the first year and a half she improved ninety percent. The last year of treatment she had two slight attacks, but has been free from them for more than a year.

In ninety per cent of the cases there was a rapid subsidence of the bronchitis so often a part of the asthmatic condition. In many cases it ceased after only a few treatments.

Another result was the decrease of clin-

real sensitiveness to excitants and stimuli which had previously precipitated attacks. This occurred regardless of the nature of the excitant, protein or nonprotein, endocrine, peripheral, or the various injections of the respiratory tract. Many patients lost their clinical sensitiveness in a very short time although skin tests were still positive.

Asthmatic patients are usually susceptible to colds. A decrease in this susceptibility was observed after treatment in seventy-five per cent of the cases.

The following cases are examples.

CASE 1 C. A., male, age thirty-three, was sensitive to horse dander, onions, and cabbage. He had suffered from asthma accompanied by an intractable cough for twenty-four years, and was rarely free from a cold. After the eighth injection of the oil he became clinically desensitized to horse dander, and after the tenth injection to onions and cabbage. He has had very few colds and the cough and asthma have been entirely relieved for three and one-half years.

CASE 2 Mrs. E. S., age twenty-five, had asthma, frequent colds, and bronchitis for twelve years. She was sensitive to aspirin. After the seventh injection she was clinically desensitized. The bronchitis gradually improved and finally disappeared. For four years she has taken aspirin frequently for headache. She has had no asthma and rarely a cold.

CASE 3 Mrs. G. S., age thirty-six, had asthma during her menstrual period. The oil was injected into the lower lobes for one year. After the third injection the attack was less severe, and after the sixth injection she menstruated without an attack. She has not had asthma for five years.

CASE 4 Mrs. R. S., age fifty-two, for ten years complained of wheezing and dyspnea after which definite and frequent attacks of asthma developed. She immediately had an attack whenever she ate tomatoes or fish. She was given eleven injections of oil for eleven months after which she was clinically desensitized to the former irritants.

CASE 5 M. O'R., male, age ten, was sensitive to water for five years. Contact with water while bathing feet or body brought on an attack of asthma. He had chronic bronchitis and contracted a cold on exposure to cold air. Both lower lobes were injected on an average of every two weeks for eight months. He was rapidly desensitized to water and has been able to bathe and swim without recurrence of asthma for three years.

In some of the patients there was a reaction following an injection, but in the majority of them the presence of the oil in the lung was well-tolerated.

When the oil contacts the trachea in some patients it produces a convulsive cough lasting from an half-hour to two hours, and the patient may become very exhausted. In others a severe attack of asthma may be brought on by an injection of as little as two c.c. of the oil. This reaction is probably caused by its contacting irritable endings of the vagi in the bronchial mucosa. If it is injected too



Fig. 3 Roentgenogram one hour after injection of oil and thirty minutes after an injection of ten m of adrenalin. Oil has nearly all passed into the vesicles. Obstruction in lumen of tubes has disappeared.

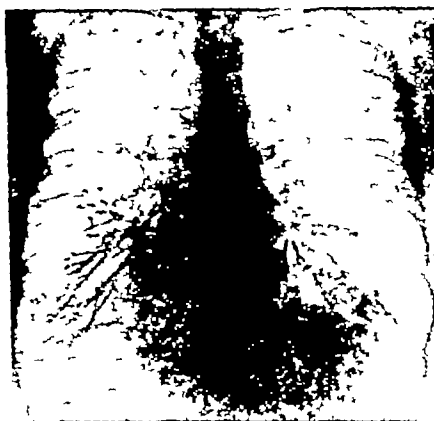


Fig. 4 Same as Fig. 3, one month later, following a reinjection of oil. Obstruction in lumen of tubes has disappeared and oil has entered the vesicles.

rapidly dyspnea follows and may produce an acute collapse of the lung

In some patients, asthma is complicated by chronic laryngitis, tracheitis, or bronchitis accompanied by an extreme sensitiveness which excites a cough reflex as soon as the oil touches the mucosa and the oil is immediately expelled. The treatment of such cases by this method is unsatisfactory and the use of a bronchoscope is an advantage.

There may be a chill, rise of temperature, increase of pulse, and pain in the area injected in some patients. If the treatments are not repeated until these symptoms subside and most of the oil disappears from the lungs, this reaction does not occur again.

There were only eight patients in the group treated in which severe iodism occurred. These patients were susceptible to iodine and the treatment was discontinued. There were no cases of chronic iodism although a large quantity of oil was kept in the lungs for a long time. Iodism can be avoided by a careful testing of the patient's tolerance and by not injecting the oil into the stomach. If the latter should occur, it should be removed at once with a stomach tube or by giving a brisk cathartic.

The oil has been kept constantly in the lungs in some patients for three years and a Roentgen ray examination made two years after treatment was discontinued disclosed no injury to the lung tissue.

Autopsy study was made in one patient who died of an abdominal condition. She had received injections for eight months. A study of the lungs revealed no pathologic change that could be attributed to the oil.

Eight cases of pneumonia occurred in the entire group while under treatment. Five of the cases were bronchopneumonia, four patients recovered and one died. Three cases were lobar pneumonia in elderly persons, they recovered. The Roentgen ray examinations of the seven patients who recovered showed much oil in both lungs. Treatment was continued in four of them for months without recurrence of pneumonia.

There were no cases of edema, pleurisy, emphysema, or lung abscess following treatment, nor any evidence of infection

having been carried into the lungs by the oil.

One death has been reported following the injection of twenty c.c. of iodized oil due to the patient's sensitiveness to it. In the patients treated none were hypersensitive to the oil.

Summary of Treatment and Results

NUMBER OF CASES TREATED 260

Group I Cases complicated by conditions such as hypertrophic emphysema, pneumoconiosis, healed tuberculosis, chronic laryngitis and tracheitis with extreme sensitivity of the bronchi in which this treatment has proved of no value 60

Group II Cases not complicated with conditions specified 200

(a) Completely relieved from one to eight years—180

The average age was 39 years, minimum—5, and maximum—72. The average duration of illness was 12 years, minimum—4 months, and maximum—48 years. The average time under treatment was 10 months, minimum—3 months, and maximum—34 months.

(b) No satisfactory relief after at least six months' treatment—20

The average age was 37 years, minimum—14, and maximum—72. The average duration of illness was 11 years, minimum—1, and maximum—39. The average time under treatment was 12½ months, minimum—5 months, maximum—33 months. The average number of treatments was 17, minimum—6, and maximum—39.

Conclusions

1 A relation exists between the presence of the pathologic secretion in the bronchial tubes and the asthmatic paroxysm.

2 The relief which follows the removal of the pathologic secretion indicates a retention of some irritant in the tubes which is contributory to the asthmatic paroxysm.

3 Patients treated by intratracheal injections of iodized oil for bronchial asthma lost their clinical sensitiveness to former irritants.

4 Ninety per cent of the patients in whom asthma was uncomplicated by the conditions specified have been completely relieved by this method for a considerable length of time.

5 The treatment is a safe procedure and produces neither immediate nor remote damage to the lungs.

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Discussions

DR ARTHUR Q PENTA, *New York City*—I should like to congratulate Dr Anderson on his splendid presentation of a very important subject, and to thank him for the hope which he has given us, in the treatment of a condition which up to the present time makes up one of the gloomy chapters in the history of medicine. There is no other condition which so completely arouses the sympathy of the physician, as does the individual suffering from bronchial asthma. To see these patients day after day, leaning over chairs and tables, gasping for air, is a sight which no physician can easily forget.

During the past ten years the allergist has been of great help in dealing with those cases of asthma in which specific proteins were the causative agents. This form of therapy has its greatest results in children under ten years of age. The majority of cases of bronchial asthma coming on after the age of thirty, unfortunately do not respond to any form of allergenic therapy. In this large group of cases one finds chronic degenerative bronchial changes with defective ciliary drainage, which have been brought about by the constant irritation of aspirated drainage material from upper respiratory infections. All of us are too well aware how easily infective material may be aspirated into the bronchial-pulmonary tract, especially during the sleeping hours. By virtue of these chronic changes the bronchi have lost their protective mechanism and have become sensitive to both specific and nonspecific irritants. The hypertrophied bronchial mucous glands throw out great quantities of secretions into the lumen of the smaller bronchi and as there is present in all of these cases a defective ciliary drainage, the bronchi become plugged, and it is only with the greatest of difficulty that the patient is able to dislodge them by coughing. Time and again I have found adrenalin ineffective in these cases. The explanation for this may lie in the fact that we are not dealing with a true spasmodic factor, but rather a mechanical factor, such as the "plugging" of the bronchi, by secretions being poured forth by the bronchial mucous glands, in response to some irritant.

Iodized oil instilled intratracheally, will give many of these patients great relief.

It is a common observation that one or two minutes following the injection, the patient is able to cough with ease and raise these large bronchial plugs, which when spread out in water one sees the pattern of the bronchi. The explanation for this sudden relief lies in the fact that (1) the oil on account of its high iodine content, tends to liquefy the secretions, (2) because of its higher specific gravity, than that of the bronchial secretions, it displaces and "floats" the "plugs," so that the subsequent coughing becomes productive in type.

My first experience with iodized oil dates back several years ago, when I gave a patient who was suffering from bronchial asthma, and in whom I suspected bronchiectasis, an injection of twenty c c of lipiodol. Soon following the injection I noted that the patient was breathing quite comfortably. However, realizing that bronchial asthma was a complicated condition, I paid no more attention to this observation. A few weeks later the patient presented himself for another injection, saying that the past two weeks had been the only time in five years that he had been free from the asthmatic symptoms.

At the present time I have thirty cases that I am treating with iodized oil, some of them undergoing treatment for nearly six months. Over forty percent show a symptomatic cure and in these cases I have been able to increase the intervals between the injections to three weeks. Before instituting this type of treatment for the relief of bronchial asthma it is important that the following procedures be carried out:

- 1 Chest roentgenograms
- 2 Bronchoscopic examination. In twelve cases of bronchial carcinoma which have come under my care during the past year, ten of them have been previously treated for bronchial asthma, for a period of time from three to eight months. In any individual presenting the symptom of "wheezing," one should always be suspicious of intrabronchial or pulmonary disease.
- 3 Complete study from the allergic viewpoint.

There are many ways of injecting the oil. The method which we prefer and use in our clinic (Bronchoscopic Clinic, Schenectady City Hosp) is the intranasal method which was taught to me by Forestier,

during his last trip to this country. With this method of course, it is difficult to inject the middle and upper lobes. However, it is interesting that in ninety per cent of our series of cases, it was only necessary to inject the lower lobes. When it is necessary to inject the middle and upper lobes we employ the catheter method. Following the first injection, fluoroscopic and x-rays studies are made. Our plan is to inject ten c.c. of oil into each lobe at weekly intervals. If no improvement is seen after the first injection, it is recommended that the next injection be increased to fifteen c.c. for each lower lobe. If no appreciable improvement follows the second injection, we then inject the middle and upper lobes. It is difficult for the present, to standardize the length of time that one should carry on this form of treatment. In our clinic, we have found that in many patients, weekly injections, for a period of four months, suffice to bring about a symptomatic cure. From then on we increase the interval of the injections to every three weeks.

Needless to say that there are many brands of iodized oils on the market. We have tried them all and have found that our best results have been obtained by the use of an iodized oil, which is sold under the trade name of Lipiodol. We have also used this particular oil in treating chronic bronchitis and bronchiectasis and the results have been most encouraging.

Before closing my discussion I would like to once again remind the members of the profession to have every case of bronchial asthma bronchoscoped before any type of treatment is considered.

SAMUEL A. THOMPSON, M.D., F.A.C.S.,
New York City—This has been a very interesting presentation. Dr. Anderson and Dr. Penta have covered the subject so well that any discussion would be superfluous. I just want to emphasize some of the things mentioned.

In bronchial asthma the lipiodol acts by mechanical and chemical means, but particularly mechanical. By virtue of its high specific gravity the lipiodol in the bronchioles displaces the pus present. It also acts as a lubricant and softens mucous plugs and casts, allowing them to be separated and coughed up easily. It covers the mucosa, protecting it from specific and nonspecific irritants.

The bacteriostatic action of lipiodol is questionable. The question of iodine absorption is also debatable as to the site where this absorption occurs.

Dr. Anderson has clearly demonstrated that the chief effect of the lipiodol is to

mechanically aid, establish, and promote good drainage of the bronchioles, and where this could not be done the results were not good. I was glad to hear him mention contraindications, for other authors have stated that the only contraindication is susceptibility to iodine. I wish, in this connection, to speak of two cases.

A woman thirty-two years old had bronchial asthma since the age of three. Two or three attacks a week was the usual course, with never more than one week between attacks. She had made the rounds of the allergists with no results. I attempted to determine the presence of bronchiectasis and so instilled five or six c.c. of lipiodol into the right lower lobe. Almost immediately she became dyspneic, cyanotic, and unconscious. She reacted to adrenalin and in twenty or thirty minutes was feeling well enough to sit up. From that time up to the present she has never had another attack of asthma—more than eighteen months.

I have no explanation to offer for such a dramatic result, but the point which I want to emphasize is that, had not the patient promptly received adrenalin she might have died, and I make it a point to always have adrenalin ready in a syringe whenever giving lipiodol to a patient for the first time.

A man forty years old had a mediastinal mass which was partially occluding the trachea. He received only three c.c. of lipiodol intra tracheally when he became dyspneic and cyanotic. An x-ray film was made immediately, then the patient received adrenalin and oxygen inhalations. He reacted very well in about thirty minutes—the x-ray showed almost a complete stenosis of the trachea.

Both of these patients had a tremendous spasm of the bronchia and bronchioles which was almost fatal and as a result I am very cautious in giving lipiodol whenever the vital capacity, regardless of the cause, is very much decreased.

I am particularly interested in the method of intrabronchial medication which includes lipiodol. The operator must naturally use the method which gives him the best results. We have developed a method which we call "bronchial catheterization" in which a bronchial catheter can be inserted into any lobe of the lung desired. This is an office procedure and is done without the aid of the bronchoscope and usually without the fluoroscope. I do not mean to imply that bronchoscopic examinations should not be done. I think most cases of bronchial asthma should have a preliminary bronchoscopic study.

I am certain that Dr. Anderson's demonstration will make most of us give this method of treating bronchial asthma a further trial.

DR GEORGE J PLEHN, *New York City* — I am sure that we have all heard a very interesting and instructive presentation. This subject has been so well covered that there is very little to be said other than to give our experience with those cases where the iodized oil was used.

For the past eight or nine years I have used lipiodol for various procedures at City Hospital on Welfare Island and in my private office. It has proved of great benefit from a diagnostic and therapeutic standpoint. It would be very difficult to give any statistics regarding the curative value at this time, as it would be necessary, particularly in regard to its use in the treatment of suppurative lung, to get the results from various institutions before arriving at any conclusion.

We know definitely that good x-ray technique is needed in visualizing the architectural structure and physiology of the bronchial tree. There is no other contrast substance which brings this out so nicely as lipiodol. I do not believe, however, that we should underestimate the dangers which occur in the indiscriminate use of injections of foreign substances into the bronchial tree.

I remember very definitely one case of tuberculosis which did not appear to be acute, yet, after the injection of the oil, flared up and resulted in the dissemination of the process throughout both lung fields with a fatal termination. Another case showed no evidence of any alteration in the architectural structure of the lung fields after the injection of lipiodol. For some reason, the patient had cough seizure which ruptured the terminal bronchioles in various portions of the basal areas of the lung so that a traumatic bronchiectasis resulted. Another case of pure asthma, in which x-ray examination prior to the injection of the oil was negative, resulted in death after the injection of fifteen c.c. of the oil into each bronchus.

These cases are reported simply to indicate some of the dangers following in the wake of injections of lipiodol into the lung field. However, these contraindications are certainly the exception to the general rule, when we consider the widespread use of lipiodol and the excellent results obtained both diagnostically and therapeutically by the use of this substance.

Dr Anderson says that in his work he did not see peristaltic action of the bronchi. I remember several cases where the appearance of the bronchi suggested movement of the oil towards the trachea. This was caused by peristalsis or by the cilia action of the mucous membrane.

It is my opinion that the amount of oil

injected is very important, particularly where both sides are injected. Apparently one-third of the entire lung on either side may be injected with safety.

We are usually able to divide the asthmatic cases which are x-rayed into three classes: *first*, those which show absolutely no pathology either before or after the injection of lipiodol; *second*, those in which there is a very definite involvement with some change in the bronchi or alveolar structure brought out only after injection of lipiodol; *third*, chronic cases which show various stages of bronchial alteration.

All cases of asthma should be thoroughly bronchoscoped before any treatment is instituted or a complete diagnosis is made. The results of our experience in the treatment of these cases indicate that some were aided by the injections, others were completely cured, and in others there was apparently no effect. We can not at this time give you any definite statistics regarding the relative results.

It would be better to consider Dr Anderson's statistics because he has charted his cases more completely and he has handled a greater number of cases from a therapeutic standpoint. There is no doubt in my mind that we are forced to be enthusiastic about the therapeutic qualities of lipiodol because of the remarkable and dramatic results obtained in some cases. I shall cite such a case to illustrate.

A young married woman about thirty years of age, became ill following a gripal infection originating in the upper respiratory tract. She apparently recovered from this initial attack, and then began to get asthmatic seizures. After a period of one or two years these seizures were almost constant. The patient lost about forty pounds in weight. She was tested out by leading allergists in this city, and gave a positive response to almost any test. Her condition was not relieved by protein injection. Because of several successful results with lipiodol in previous asthmatic cases, I injected fifteen c.c. of lipiodol in each lung field. X-rays taken before the injection failed to reveal any pathology in the lung fields. She became cyanotic after the injection, making it necessary to give her adrenalin. She developed a giant urticarial rash. Since that time (about six years ago) she has never had an attack of asthma.

From such reports it stands to reason that we find it difficult not to become enthusiastic concerning the use of lipiodol in asthma. We are all the more likely to become so after the very excellent and comprehensive presentation given us by Dr Anderson. I believe we shall all continue this method and tabulate our findings so that we have definite statistics to offer in the relief and cure of the asthmatic patient.

ERGOT AND ERGOTAMINE TARTRATE FOR PUERPERAL PROPHYLAXIS

JOHN E TRITSCH, M D, *New York City*

From the Department of Obstetrics and Gynecology, Metropolitan Hospital

The use of drugs and certain other measures following delivery and in the puerperium have long been employed by obstetricians to stimulate contraction of the uterus, the objects of which are (1) to prevent or control postpartum bleeding, (2) to hasten involution, and (3) to decrease the possibility of infection.

In a previous report on this subject¹ comparisons of the results obtained with certain drugs in two groups of puerperae were recorded. One group received one c.c. pituitary extract hypodermically immediately after the third stage of labor and one dram of ergot fluidextract U.S.P. orally every four hours for two days. The second group was given 0.5 mg. ergotamine tartrate (1 c.c.) intramuscularly immediately following expulsion of the placenta and one tablet (1 mg.) ergotamine tartrate by mouth every four hours for two days. In the latter group involution appeared to progress more satisfactorily and there were fewer uterine infections.

Since the publication of our last paper, Davis, Adair et al.² in a study of human uterine motility, have practically disclaimed any efficacy of the alkaloids of ergot administered by mouth, as a result of their experiments on human uteri utilizing a hydrostatic bag inserted into the uterus and recording uterine contractions postpartum on a kymograph. However, clinically we feel that too much evidence has been accumulated favorable to ergotamine to dismiss it because of results obtained in what almost amounts to a laboratory procedure.

Pursuant to this previous study of 159 patients, we here present the results in a larger series, consisting of 761 additional cases all of whom received the same general care, but, for the purpose of determining the effect of ergot medication, this series was divided into three groups as follows:

Control group. Fifty-nine patients, (28 primiparae and 31 multiparae), to whom no routine postpartum medication was given.
Aseptic ergot group. 202 patients (66

primiparae and 136 multiparae), to whom aseptic ergot was given by intramuscular injection immediately following delivery of the placenta followed by one dram of fluid extract of ergot orally every four hours for three days.

Ergotamine tartrate group. 500 patients (170 primiparae and 330 multiparae), to whom one c.c. ergotamine tartrate solution was given intramuscularly immediately after expulsion of the placenta, followed by one tablet (1 mg.) of the same drug orally every four hours for three days.

As in our preliminary study, we have judged the course of the puerperal processes in each of the three groups by the following criteria:

- 1 Bleeding and lochial disturbance
- 2 Uterine involution
- 3 Maternal morbidity postpartum.
- 4 The average age and duration of labor are considered

After pains are also considered, but this factor is chiefly of academic interest and has no particular relationship to the value of ergot therapy.

1 Bleeding or lochia. It is very difficult to ascertain the relative amount of blood lost through the period of days postpartum. Consequently no accurate appraisal of this criterion is made in this series. However, due to excess of lochia, additional medication was necessary in a number of instances. The medication usually utilized was pituitary extract and ergotamine tartrate. The following indicates the number of times this was necessary in each group:

	Primiparae	Multiparae
Control group	12 or 42.8 per cent	17 or 54.8 per cent
Aseptic ergot group	10 or 15.1 per cent	25 or 18.4 per cent
Ergotamine tartrate group	4 or 2.35 per cent	12 or 3.6 per cent

2 Uterine involution. The progress of uterine involution, while in itself is of not great importance, probably contributes in an indirect way to the incidence of puerperal morbidity. The height of the fundus was measured on the day of delivery and on the first, second, third, fifth, and seventh days postpartum. Charts I-II indicate the average height of the fundus in primiparae and multiparae during these days postpartum.

The changes occurring in the height of

the fundus postpartum as measured in centimeters are recorded in Table I

TABLE I—DECREASE IN HEIGHT OF FUNDUS POSTPARTUM

Days	Control Group		Aseptic Ergot Group		Ergotamine Tartrate Group	
	Primiparae	Multiparae	Primiparae	Multiparae	Primiparae	Multiparae
1	17 cm	18 1 cm	1 20 cm	1 2 cm	2 55 cm	1 85 cm
2	86 "	1 03 "	66 "	1 2 "	94 "	1 09 "
3	1 23 "	1 00 "	1 46 "	8 "	1 15 "	95 "
5	88 "	49 "	88 "	8 "	1 30 "	87 "
7	68 "	91 "	1 16 "	1 2 "	94 "	1 26 "
Total	5 35 cm	5 24 cm	5 36 cm	5 2 cm	6 88 cm	6 02 cm

3 *Maternal morbidity postpartum* The standard of morbidity utilized in this investigation is as follows Patients whose temperature was taken every four hours and found elevated to 100.4° F on any two successive days following the day of delivery and until the tenth day were considered morbid Using this standard, the percentage of net morbidity (eliminating temperatures not due to birth canal infections) in each group is indicated by the following

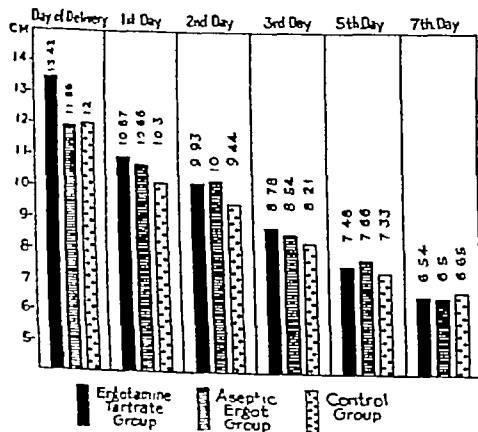
	Primiparae	Multiparae
Control group	14 3%	13 0%
Aseptic ergot group	15 0%	9 0%
Ergotamine tartrate group	11 76%	6 6%

4 *Average age, duration of labor and occurrence of afterpains* The average age of the patients in these groups is as follows

	Primiparae	Multiparae
Control group	21 1 yrs	23 0 yrs
Aseptic ergot group	21 2 yrs	27 6 yrs
Ergotamine tartrate group	22 8 yrs	27 07 yrs

The duration of labor in each group is indicated by the following

CHART I—HEIGHT OF FUNDUS POSTPARTUM—PRIMIPARAE



	Primiparae	Multiparae
Control group	12 25 hrs.	10 42 hrs
Aseptic ergot group	13 4 hrs.	9 88 hrs
Ergotamine tartrate group	16 43 hrs.	9 26 hrs

The incidence of afterpains in primiparae and multiparae is indicated by Charts III-IV

Comment

From the data presented in the preceding charts and tables it seems evident that ergot preparations have a definite value when given routinely during the puerperium A comparison of the results obtained in the aseptic ergot group with those obtained with ergotamine tartrate indicates that the latter appears to have a more beneficial action, in addition the non-irritant effect of the ergotamine injections as compared to aseptic-ergot and the freedom of the oral forms of ergotamine tartrate from the disagreeable odor and taste of ergot fluidextract make them less objectionable to the patients

1 *Postpartum bleeding* The necessity for additional medication to control excessive bleeding was greatest in the control group and least in that receiving ergotamine tartrate, both in primiparae and multiparae.

2 *Involution* In spite of the fact that the fundus on the day of delivery was higher in the ergotamine tartrate group, subsequent involution was more rapid than in either the control or aseptic ergot groups and on the seventh day the fundus on the average was as low as, or lower than, in the two other groups

3 *Maternal morbidity* The average duration of labor in the primiparae of the

CHART II—HEIGHT OF FUNDUS POSTPARTUM—MULTIPARAE

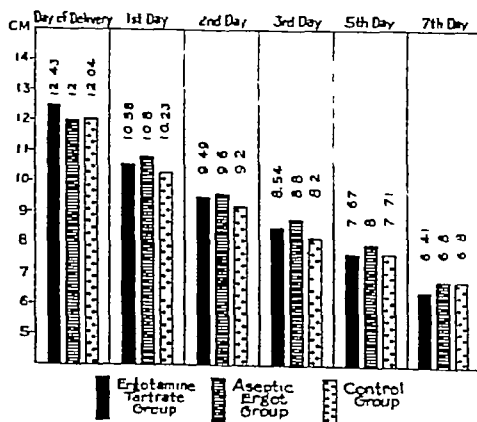


CHART III—PERCENTAGE OF OCCURRENCE OF AFTERPAINS IN PRIMIPARAE

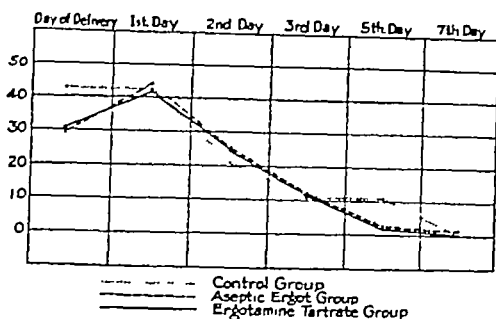
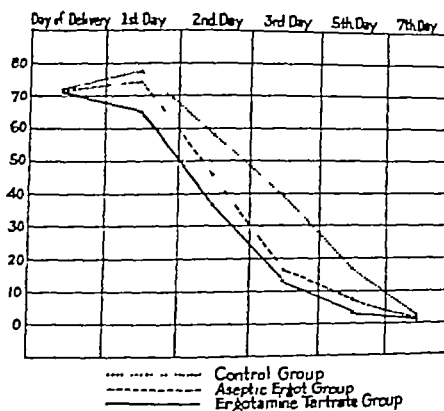


CHART IV—PERCENTAGE OF OCCURRENCE OF AFTERPAINS IN MULTIPARAE



ergotamine tartrate group was greater by three to four hours than in the other groups, nevertheless the percentage of net morbidity in this group was lower. In the multiparae the average duration of labor in the three groups varied only slightly more than an hour that is, control group, 10.4 hours, aseptic ergot group, 9.88 hours, and ergotamine tartrate group, 9.26 hours. The morbidity rate was lowest in the latter group.

4 *Average age and duration of labor and occurrence of afterpains.* The patients were all in approximately the same age groups and the average duration of labor has already been referred to above.

The incidence of afterpains presents an interesting comparison. Referring to Charts III and IV (1) they appear to occur about twice as frequently in multiparae as in primiparae (2) In multiparae they occur in a greater percentage of cases and persist longer when no medication is given (3) They occur in a greater proportion of cases on day of delivery, first or second

days, and then gradually diminish until by the seventh day they disappear in practically all patients.

Conclusions

1 Clinically, ergot preparations appear to be beneficial for routine use in the postpartum period.

2 Ergotamine tartrate appeared to possess greater efficiency as a puerperal prophylactic to decrease bleeding, favor better involution, and decrease liability to postpartum fever, than other ergot preparations used in this study.

1000 PARK AVE.

References

- 1 Tritsch, J. E. and Brown, R. *Jour Amer Inst Homeop.*, June, 1934.
- 2 Davis, M. E., Adair, F. L., et al. *Amer Jour Obs & Gyn.*, Feb., 1935.

SURGERY FOR HIGH BLOOD PRESSURE

Cure of high blood pressure by surgical methods was described to the New York-Pennsylvania-Ontario section of the American College of Surgeons in Buffalo by Dr. George Crile of Cleveland.

Dr. Crile pointed out that adrenalin, hormone secretion of the adrenal gland, has been known to increase the individual's vigor and energy and that, by removing one of the glands, high blood pressure has been remedied. After a time, however, he said, it has been found to recur.

"But we have discovered," he continued, "that the sympathetic nervous system, with its complex between the adrenal glands, secretes a substance more powerful than adrenalin. This substance, called sympathin,

gives power, flash, force to the body.

"An excess of this secretion causes an excess of power or force, consequently essential hypertension (high blood pressure). By surgery on the sympathetic nervous system, cutting down the secretion of the substance, the hypertension is eliminated."

Before operating on humans, Dr. Crile pointed out, he used all kinds of animals, from the mouse to the elephant, animals from Africa as well as America. It was found, for example, that the tiger and lion, which have a great deal of power, have highly complicated sympathetic nervous centers, while the alligator with little power, has a simpler system.

Case Report

OUTBREAK OF COWPOX, CAUSED BY A VACCINATION INVOLVING TWO FAMILIES AND TWO HERDS OF CATTLE

STANLEY W SAYER, M D, *Gouverneur* AND FRANKLYN B AMOS, M D, *Albany*
New York State Department of Health

After careful inquiry we have been able to find no report in medical literature, and only one report in veterinary medical literature, of an outbreak of cowpox in a herd of cattle and a family, undoubtedly introduced by smallpox vaccination. Such occurrences are perhaps not as rare as the scarcity of references would seem to indicate, since several textbooks consulted, mention such possibility but cite no specific instances.

This outbreak of cowpox was first called to our attention by Dr John T Fowkes, Sr, Health Officer of LaFargeville, N Y, to whom due credit must be given for recognition of the situation and for assistance which he gave in investigation. Unfortunately, no physician learned of these cases until nearly two months had elapsed after the original vaccination so that in some of the cases the cowpox lesions were entirely healed, and dependence had to be placed upon the patients' statements and descriptions of the lesions in order that a determination be made. However, we believe that there is little likelihood of error in the stated diagnoses. It is probable that these cases would have passed unnoticed had it not been for the one case of eye infection which practically destroyed the sight of that eye.

On June 14, 1935, Miss R F, age nineteen, was vaccinated by Dr Fowkes. About one week later she began to have a local reaction with considerable swelling and redness of the arm extending approximately thirteen cm in all directions. The local reaction lasted approximately one week and was accompanied by a moderately severe systemic disturbance. At the end of about three weeks the crust came off and the lesion was entirely healed, there was no unusual discharge at any time. Two other children in this family, T F, age fourteen, and B F, age ten were vaccinated at the same time, their vaccinations running an uncomplicated course.

On July 19 it was first noticed that the cows in the F dairy had cowpox. Each of the family who worked in the dairy had certain groups of cows assigned which he milked. Cowpox first appeared on one of the cows which Miss R F milked. Following this first case, cowpox spread

throughout practically the entire dairy herd of about fifty cattle and was still present on some of the cows on August 22. Dr A W Peacock, New York State Veterinarian and Milk Sanitarian, confirmed the diagnosis of cowpox.

About July 25, the mother of Miss R F and who was successfully vaccinated about thirty-eight years ago, developed a lesion on her right forearm which according to both the patient and Dr Fowkes, was similar to a lesion produced by vaccination. On July 27, she began to have burning, itching, and watering of her right eye, and three days later consulted Dr B because the eye condition was growing progressively worse. Dr B's examination showed "edematous sclera with considerable pus on the sclera and cornea." Dr B and Dr Fowkes advised her that she should see a specialist and on the following day, July 31 she consulted Dr A L T of Watertown. His examination showed "induration and boardlike hardness of both lids which could be separated only slightly." The patient was treated in the Mercy Hospital at Watertown from July 31 to August 3, during which time the condition apparently improved considerably. However, corneal ulcer developed about August 8 and later other complications practically destroyed the sight of this eye. This case was diagnosed as due to cowpox inoculation.

The other members of this family consisted of (1) Z F, age fifty-six, never vaccinated. He assisted in the care of the cattle but did not develop cowpox. (2) J F, age twenty-six, vaccinated about twenty years ago did not assist in milking or the care of the cattle and did not develop cowpox. (3) G F, age twenty-one, never vaccinated, assisted in milking and developed cowpox August 5. (4) M F, age seventeen, never vaccinated, assisted in the care of the cattle and developed cowpox August 8. (5) R F, age fifteen, never vaccinated, assisted with milking and developed cowpox August 10. (6) T F, age fourteen, vaccinated at the same time as Miss R F, assisted with the milking and did not develop cowpox. (7) B F, age ten, vaccinated at the same time with Miss R F and T F, did not assist in milking and did not develop cowpox. (8) E F, age twelve, never vac-

cinated, did not assist in milking and did not develop cowpox. There was no previous history of cowpox in any of the members of the family. Each case of cowpox, except Miss R. F., was accompanied by characteristic symptoms, both local and general. Miss R. F., who was the cause of the outbreak (vaccinated June 14), developed a lesion on the left little finger on August 4 which was similar to the small pox vaccination, with no systemic reaction at this time.

On July 10, Miss R. F., went to the home of her sister, Mrs. R. B., remaining there until July 22. While there she assisted in milking. On July 27, cowpox appeared in this dairy, beginning on the cows which Miss R. F. milked. On August 1, Mr. R. B., age twenty-four, not previously vaccinated, developed several lesions on his hands and forearms which were described by Dr. Fowkes as similar to vaccination lesions. He was quite ill, necessitating his remaining in bed for two days. On August 17, Mrs. R. B., age twenty-four, never vaccinated, had a similar lesion on her right forearm which was round, between one and two cm. in diameter, considerably raised, yellowish-white in color, and slightly umbilicated in the center with beginning crust formation. The skin over this area was tense and translucent with a surrounding area of swelling and redness eighteen cm. in diameter. There was also another similar lesion on her right thumb which had started two days previously, and which consisted of a reddened, swollen area with a small blister formation in the center. L. B.,

brother of R. B., unvaccinated, assisted in caring for R. B.'s dairy and developed cowpox on August 16.

An inquiry was made and we were unable to locate any cowpox in the vicinity with the exception of those mentioned above. The accompanying chart lists the cases mentioned.

Summary of Events

1 Three children in a family living on a dairy farm were vaccinated against small pox on June 14, 1935. Two of these followed the usual mild course. The third was a more active reaction and was considered as a "severe, uncomplicated take."

2 Two of these people, including the individual with the "severe, uncomplicated take," milked cows daily.

3 On July 19—thirty-five days after the vaccination and twelve days after the lesions were healed—cowpox was discovered among the dairy animals. The first cases were noted among the animals milked by person with the "severe, uncomplicated take."

4 By August 22 nearly all the dairy animals were infected.

5 All persons who milked these cows, except the father of the family, age fifty-six and the son, age fourteen, who was vaccinated on June 14, developed cowpox prior to August 10.

6 None of those who developed cowpox had ever been vaccinated except the mother, who had been thirty-eight years previously and the individual who had the "severe, uncomplicated take" following the vaccination on June 14.

Name	Age	Date vaccinated	Date cows developed cowpox	Date of milking dairy		Date of appearance of cowpox	Description and location of lesions
				F	B		
R. F.	19	6/14	7/19	To 7/18 7/22 to present	7/19 to 7/22	About 8/4	*Typical on right little finger. Temp 103.3
T. F.	14	6/14		All time			
B. F.	10	6/14					
Mrs. C. F.	52	About 38 yrs ago		To 7/25		About 7/25	On right forearm and right eyelid. *Typical
Mr. Z. F.	56			All time			
J. F.	26	About 20 yrs. ago					
G. F.	21			All time		8/5	*Typical on both hands and forearms. Temp 101.5
M. F.	17			All time		8/8	*Typical. Temp 103.5 Arms and hands
R. F.	15			All time		8/10	*Typical. Temp 103 Arms and hands
E. F.	12						
R. B.	24		7/27	All time		About 8/1	On both hands and on face. *Typical
Mrs. R. B.	24			To 7/18 & 8/5 to present		About 8/15	On left forearm and left thumb. Round yellowish white, raised one-half cm. umbilicated. St. crust formation in center. *Typical
L. B.	?				8/7 8/11	8/16	*Typical — on both hands and on face

* See description opposite Mrs. R. B. These lesions were not seen

7 The person with the "severe, uncomplicated take" who was vaccinated on June 14 and was completely healed on July 7, visited another dairy farm and milked cows there from July 19 to July 22

8 On July 27—five days later—cowpox appeared in this herd.

9 All of the other people (3) who milked this herd developed cowpox within the following twenty-one days

10 None of these three people had ever been successfully vaccinated

11 In so far as we could ascertain there had been no other recent cowpox in nearby dairy herds

Conclusions

1 An individual who had been recently successfully vaccinated against smallpox infected the animals of two dairies with cowpox.

2 These infected cows, in turn, were the sources of infection of eight human cases of cowpox

3 None of the human cases of cowpox were in persons who had ever been previously successfully vaccinated—except one who was vaccinated thirty-eight years previously and one who was vaccinated on June 14 and was undoubtedly the cause of this outbreak.

4 The only persons on either of these two dairy farms who assisted in the care of the cattle and who escaped infection were the father age fifty-six years and one son who was successfully vaccinated on June 14

5 In the opinion of the physicians who saw these cases, the systemic reaction was somewhat more severe than is usual in cowpox in the human

6 Recently vaccinated individuals in the infectious stage of cowpox should not be allowed to care for dairy animals

BETWEEN MENTAL HEALTH AND MENTAL DISEASE

B LIBER, M.D., DR.PH., *New York City*

Editorial Note Under this title will appear short summaries of "transition cases" from the service of this author in the New York Polyclinic Medical School and Hospital. The descriptions are not complete clinical studies, but will accentuate situations from the point of view of individual mental hygiene such as crop up in the every day practice of medicine

Prolonged Hunger Strike

This case is sent by a colleague who writes "I have heard about children who refuse to eat, but never of a refusal prolonged almost to adult age"

Yes, we have all heard of children who decline to eat as an instinctive protest against their parents' mistreatment, or for the purpose of gaining attention, or just to spite their elders. But these situations usually do not go beyond childhood

Here is the case of a young man of eighteen who has not freed himself from the inability to eat uneventfully, which he had acquired in his early age.

He is not an only child, but he has the misfortune of being intensely loved (is it love?) by a mother who is exceptionally energetic and tyrannical. The other one, a girl of 22, has been left to her own wits from the beginning, therefore she is happy and presents no problem

From this mother's answers to my questions and from much experience with other cases, I reconstruct the early part of the story

She found that her boy, whom she had been expecting for years, even when her daughter had the audacity to be born, and who was destined by her to be her last child, failed to eat as much as her neighbor's little son. At the age of two he was but normal in

weight and not fat—certainly not chubby enough to come up to her ideal. Consequently she began to feed him so he could attain the avardupois which would satisfy her and would not shame her in the eyes of others. But the more she insisted the less he ate. *Indeed her insistence interfered with his eating.* Food meant a torture to him. He finally hated it.

The child fought with all his might. When satiated he would turn his head away, would push the spoon back, would spit out the surplus food. But she did not give up. She was not rough, she never beat him. While pestering him with the extra milk and cereal and so on, she attracted his attention elsewhere, or sang a song for him, or still later, told him or read him a story or gave him a toy or a penny. *It was forcing through coaxing*

In the course of time, when he could not stand it any longer he became sick and vomited, which he discovered, always relieved him. Then he learned how to bring up and regurgitate the undesired nourishment at will. It was partly this ability and partly the natural revolt of his stomach that *saved his life*

But seeing how much fuss was made about his eating and how his refusal of food made his mother unhappy, he also

learned that he had a strong weapon with which to fight her and force her to his knees. Whenever he wanted to obtain something, he declined to eat or he vomited what he had eaten. Then she was sure to come to terms.

So far there is nothing new. It is the usual case.

But ordinarily the children free themselves from their parents' supervision. They go out and associate with others of their age, while the mothers and fathers relax and loosen their grip.

This mother, however, was stubborn and clutched the boy with all her might. Was it because she was uninterested in her husband? Or because she had nothing else to do in her life?

One thing was certain. This was her boy in the same sense as the pen with which I am writing now is my private property. She held on and would not give him up. She was a vampire who never ceased to get her moral satisfaction from directing every detail of his life and never allowed him to make one voluntary step. He was five years old, then seven, ten, thirteen, sixteen and now eighteen. But that made no difference. He was still her baby. Nay, his own will had been so curbed, yea, so killed, that in spite of his native intelligence, he had no initiative.

And now she came to the doctor with him and complained that he vomited, that he was very slim, that he lacked appetite. He was anemic and 19 pounds underweight.

Vomiting had never discontinued. He would become hungry, would eat, then vomit and feel weak and refuse food until his appetite would return.

The most thorough examination could find nothing organically the matter with this youth. His was an unchanged state of mind, uninterruptedly kept up since earliest youth. There was no question of psychosis, but there was undoubtedly a *mental anomaly*. Nor was there any other mental illness or symptom. *His mind was on a hunger strike*.

The condition was far gone and difficult to remedy.

Of course, an appropriate diet was necessary, but only for a short time. The treatment was psychotherapeutic mainly. The battle had to be fought on two fronts. The situation had to be explained brutally and repeatedly both to the boy and to the mother, but at separate sessions. The mother's resistance was hard to vanquish, but as soon as the boy's cooperation was won she mattered less and less.

All in all it was not easy. It took a long time, but the young man improved and within two years he was like the average of his fellow boys. 611 W 158 St

SLENDERIZING WHILE YOU SLEEP

The Manchester Guardian comments in rhyme on an article in the *Journal of the American Medical Association* to the effect that one loses weight during sleeping hours. The average person is presumed to weigh 13 pounds less when he rises in the morning than when he retired the night before. This method of slimming has a certain disadvantage inasmuch as the loss is recovered during the day. *The Manchester Guardian* poet, after recounting the various methods of weight reduction, prefers the *Journal A M A* method.

There are those who slim by antic,
And by exercises frantic,
As they roll with Corybantic
Zeal around the bedroom floor,
There are those who trust to diet
And, to keep the waist-line quiet,
Run to fruitarian riot
And to grape-fruit by the score.

Others nurse a hopeful notion
That some patent pill or potion
Will remove without commotion
Any surplus seam or fold,
Some by Turkish baths have bounded,
Where, by clouds of steam surrounded,
They can get themselves well pounded
By a bath attendant bold.
As for me, with some aversion
I regard that rash excursion,
Nor shall diet or exertion
Represent the path I tread
Let them dope, or jump, or simmer—
Those are lamps that feebly glimmer—
How much better to grow slimmer
As one simply stays in bed!
And if grinning friends turn traitor
As they see one growing greater,
'Cos the tonnage turns up later
As the day draws near its close,
One can spurn all sneers and scorning
With the just and truthful warning
"You should see me in the morning—
I was sylph-like when I rose!"

COUNTY SECRETARIES' CONFERENCE

The Annual Conference of County Secretaries will be held in Albany on Tuesday September 15, at 10 00 A M at the DeWitt Clinton Hotel

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2472



DANIEL S DOUGHERTY

Born February 19, 1861

Died August 4, 1936

*New York University Medical
College—1884*

*Secretary, Medical Society of the
State of New York—1925 to 1936*

Secretary-Emeritus—1936

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EDITORIALS

Daniel S Dougherty

Rich in years, rich in friendships, and with a record of service to the profession well done and acknowledged, Daniel S Dougherty, Emeritus-Secretary of the Medical Society of the State of New York, passed to his eternal reward and rest on Tuesday, August 4th

In his early career, a student of otolaryngology, he attained a degree of eminence in this specialty and probably could have made an outstanding career in this line of endeavor, had not the larger problems of social life lured him to its fold. At first in masonry where high fraternal honors were won, and then in organized medicine he finally found his place and made his distinguished career.

In organized medical circles his prominence and leadership guided the New York County Medical Society safely through many stormy and uncharted seas to strength and unity. He was a potent factor with Jacoby, Elliot Harris, Phillips, Van Fleet and others in reorganizing and building the strength of the State Society. We still seem to hear the applause and acclaim which greeted his last appearance

before the last meeting of the House of Delegates

Here was a big, broad-gauged man who knew little of pettiness in the inevitable politics which swirled about him. His uncanny instinct to unearth unselfish workers for the general good resided in his own self-sacrificing view of his work.

In the profession all groups and all classes laid claim to his friendship, and no one was too lowly, too poor, to be met in kindly, tolerant fashion and helped along his road if Dougherty could find a way.

He stood for individualism. He distrusted the plausible, the glib, and the ready-made solutions, and those who proposed them. He was rigid in principle but easy on the weak, the tempted, and erring. To build from these latter better and stronger medical men Dr Dougherty considered an outstanding achievement.

He was a deeply religious man, and daily exhibited in his thoughts and actions the Divine command, "Love thy neighbor as thyself."

We shall miss his wise counsel, his witty observations, and his sterling leadership, but we are richer in our knowledge of the fine tradition of service he leaves us.

Are Physicians Interested in Health Examinations?

In an editorial published in this JOURNAL we spoke of the advisability of the State Department of Health utilizing its facilities to promote public interest in periodic health examinations. We were fully aware of the earlier intense efforts of the Department in this field of preventive medicine and deplored the sudden relaxation of its activities in this direction.

The Health Department, in a letter to the editors (page 1173), puts forth an interesting reason for the sudden cessation of its efforts. Reports have come to its attention wherein people, acting upon the advice of the Department, were told by their physicians that "you don't need an examination. Go home and forget it." A prominent teacher stated that periodic examinations tended to make neurotics. From these isolated instances the Health Department assumed that doctors in general were not actively interested in performing health examinations.

The representative groups of medical men definitely favor periodic health examinations, and it is our impression that the greater number of individual physicians are also favorably disposed toward them. Like all other things, however, official agencies interested in promulgating a cause, can judge the efficacy of their endeavors only by the direct or indirect response of interested parties. In this instance the inestimable value of the State Health Department in furthering the cause of health examinations should be encouraged not only by organized bodies of medical men but through approval in writing by individual physicians addressed to the Department.

"Extension" Schools

Among the many principles formulated by the A.M.A. at its last meeting, none are more important than those dealing with various extra-scientific phases of medical education, beginning in medical school and continuing throughout the internship. Few graduates in medicine

leave college with adequate knowledge of the financial conditions prevailing in their profession or the economic problems they must face. In the perplexities and hardships of the early years of practice the bewildered tyro is apt to fall into unethical habits which clearer understanding of medical economics might prevent. It is a limited view of professional education which embraces only technical subjects, and the medical school which fails to impart at least the rudiments of medical economics to its students is delinquent in a basic duty.

No less than the medical school, hospitals approved for intern training have a heavy responsibility toward beginners in medicine. During his internship the young physician learns not only the practical uses of his academic inheritance, but the actual ethical content of intra-professional and public relationships. The attitude and principles acquired during this period lay the foundation for subsequent professional habits. For this reason institutions endorsed for intern training should limit their staffs to members in good standing of the local county medical societies.

No one pretends that reputable physicians do not exist outside of organized medicine or that membership is an infallible guarantee of professional virtue. The county society is, however, the stronghold of ethics and integrity in medical practice, and membership connotes a voluntary acceptance of certain essential principles and restrictions. In addition, it paves the way for disciplinary action in the event of violation of the ethical code. The hospital which has only county society members on its staff exerts a potent influence in behalf of honorable professional conduct which is bound to be reflected in the views and practices of its interns.

Unified Health Programs

In the western world, at any rate, the twentieth century has been characterized by a high degree of health consciousness. Philanthropy and government have turned

increasingly to public health as an appropriate medium for the expression of benevolent impulses, and a large number of social welfare groups have become active in this field

While the latter have achieved many notable results, the multiplicity of agencies undeniably lessens efficiency and produces a certain amount of needless reduplication and confusion. To obtain the maximum good from their at present diffuse efforts, the Committee on Public Relations of the Medical Society of the State of New York suggests community councils to study and organize all of the health projects in a given district and assign approved undertakings to the organizations best qualified to carry them to success.

This suggestion is certainly deserving of consideration. Partly because of the depression, partly as a reaction against the over-standardization of the nineteen twenties, there is a beginning awareness among government officials and the public that preventive as well as therapeutic medicine centers around the individual practitioner. At the present time most of the social welfare workers who are active in the field of health are divorced from effective contact with the private physician. A frequent result is that their attitude toward health questions is warped, their approach to medical problems devious and unsound.

The establishment of local health relations councils would pool the interests and efforts of all the active health groups in a community. Reduplication would be eliminated, misunderstandings averted, and more accurate criteria applied to projects under consideration.

It goes without saying that such councils would fail of their purpose completely without responsible medical guidance. The physician is the core and natural leader of all health projects. By taking the initiative in the formation of community health relations councils, the county medical societies can reaffirm the profession's traditional precedence in the realm of health.

Permeability of Meninges to Arsenic

The malarial treatment for dementia paralytica resulting from a luetic infection has proven of inestimable value in obtaining clinical cures. It has been augmented in recent years by other methods of fever therapy. Observers, however, have been more or less at a loss in explaining why certain cases respond favorably to this type of medication while others are not benefited in the least.

Paulian¹ has found that untreated cases of dementia paralytica show an increased permeability of the meninges to arsenic. He has recovered as high as 24 mgs of arsenic per hundred c.c. four hours after intravenous injection. In the normal individual this permeability is absent. He attributes this alteration to the presence of the luetic vascular lesions and their known effects upon the functions of the nervous tissue.

In cases wherein fever therapy has been followed by a satisfactory clinical result he noted that the meningeal permeability was considerably lowered as compared to the status existing prior to the institution of treatment. He does not attempt to explain this finding by stating that the vascular lesions were cured by the malarial therapy. He offers it as a test for the estimation of the degree of improvement and the duration of the clinical cure in the given case of dementia paralytica.

CURRENT COMMENT

"SHOUTING THE COLLEGE CRY OF FREEDOM" is the title of a most timely and thought provoking editorial in the July 18 issue of *The Saturday Evening Post*. We quote from this editorial at some length: "Former Senator George Wharton Pepper, in commenting on the speeches of two graduates at the Williams commencement, reminded them that 'industrialists cherish their freedom just as much as you cherish your academic freedom,' and continued

"Remember, that you cannot have your campus freedom if there is regimentation everywhere else. I ask you to look upon Berlin and Bologna to see what has happened there. On the Continent, the tendency

¹ Paulian, D. *Ann. de Med.* 39:375, 1936

has been to place all authority in the executive * * * ,”

No class, including both those inside the New Deal and many of those inside the colleges and the universities, has more vigorously attacked the American System, under which industry functions, than the professors. With many and notable exceptions, they have howled to highest heaven against any curtailment of their freedom of speech and action. We are with them in this, even while reminding them that they owe their freedom to the Constitution with its Bill of Rights, and their buildings and endowments to that American System which some of them would destroy * * *

Colleges cannot continue to come to industry for huge sums, while many of their professors are working tirelessly to destroy its ability to make the profit from which education draws its funds. In the end, and before long, as things are going, our colleges and universities must look to industry or to the Government for funds. If the latter, they cannot finally escape that regulation and regimentation that some of their professors would impose on others * * *

Pseudo intellectuals, for real ones never speak of themselves as intellectuals, and particularly those who have inherited wealth, and many of those whose salaries are drawn from the profits of industry, are curiously intolerant and blind. They are contemptuous of any opinions except their own, and blind to what has happened to the intellectuals of other countries who have gained their heart's desire, especially in their pet—Russia * * *

There have been exceptions, but business and industry as a whole have been singularly tolerant of attacks by those who are supported out of their profits and who are trying to undermine the American System

* * * If they ask for freedom under the Constitution and the Bill of Rights, they do not try to deny that same freedom to others * * *

If the study of the humanities leads to inhumanity, even though it temporarily wears the cloak of charity, if study of the realities leads to unreality, even though it temporarily wears the cloak of high purpose, then education in the United States is a flat failure * * * No man who has read deeply and who has thought things through in the light of the past and the present, can fail to see that present-day tendencies lead toward the destruction of their most cherished ideals. And these men, we believe, are still in the majority in our educational institutions.

God help us if they are not, for then the stream of freedom will be contaminated at its source.”

“ * * * IF SCIENCE CAN DEFEAT INFLUENZA as it has already defeated smallpox, diphtheria and typhoid, we may save as many lives every year as we kill with our automobiles.”—From *Today* of August 1, 1936

“THE FUNDAMENTAL WEAKNESS of politically controlled systems of medicine is that they ignore the human side. They classify patients like botanical entities—they prescribe who shall treat and who shall be treated—they override the fundamentals of trust and confidence between patient and physician. Dictatorial medicine is robot medicine—a Frankenstein that can turn about and destroy.”—*Pittsburgh Medical Bulletin*

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories of Group B applicants by the American Board of Obstetrics and Gynecology will be held in various cities in the United States and Canada on Saturday, November 7, 1936

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Bldg., Pittsburgh (6), Pennsylvania. Applications for this examination must be filed in the Secretary's Office sixty days prior to the scheduled date of examination.

PHYSICAL THERAPY CONGRESS

The American Congress of Physical Therapy will hold its fifteenth annual session at the Waldorf-Astoria Hotel, September 7 through 11. Symposia on short wave

therapy, hydrotherapy, electro-resection and exercise will be part of the program. Fever therapy and peripheral vascular disease will also be discussed. Clinics and exhibits will be included.

Correspondence

[THE JOURNAL reserves the right to print correspondence to its staff in whole or in part unless marked "private." All communications must carry the writer's full name and address which will be omitted on publication if desired. Anonymous letters will be disregarded.]

STATE OF NEW YORK
DEPARTMENT OF HEALTH
ALBANY

1065 Lexington Avenue,
New York City

To the Editors

In one of your editorials, a few months ago, reference was made to the desirability of the State Department of Health using its facilities to interest the public in the idea of having periodic health examinations.

On the assumption that someone may be interested, I am enclosing a copy of a "radio health talk" which I prepared back in 1924. This was one of several on this general subject, which we gave in the course of three or four years. Like all of our former "health talks" these were first broadcast from Station WGY and then sent to the newspapers and quite generally used.

In 1925, through our *Health News* (which goes to all physicians who indicate an interest in receiving it) we called attention to the then new manual on periodic examinations published by the American Medical Association. In 1927 we purchased a supply of A.M.A. health examination blanks, mentioned the source and price and offered to send samples to physicians on request. We also distributed reprints of Dr. Haven Emerson's article on "The Health Examination." Through our more recent radio health plays "The Health Hunters," and otherwise, we have repeatedly called attention to the matter. Our advice, in substance, has always been "Don't wait. Go to your doctor and have a health examination."

If we relaxed a little, after our first vigorous efforts in this line, I believe it was due to the impression that the doctors, generally speaking, were not actively interested. One prominent medical teacher was said to have referred to the periodic examination as something tending to "make neurotics." We heard of people who had acted on our advice and gone to their doctors, only to be told, in effect "There is nothing wrong with you. You don't need an examination. Go home and forget it." Perhaps these were isolated instances which we heard of just as we hear only of the airships that "crash." But, like the crashes, they made an impression.

What is your impression? Are physicians, generally, interested in making health examinations? Do they feel that they are "worth while?" If the answer is "yes," I am sure the State Department of Health stands ready to cooperate.

Sincerely yours,
PAUL B. BROOKS, M.D.
Deputy Commissioner

July 22, 1936

To the Editor

I beg to protest against the publication in your latest issue, of an article entitled "Life and Love."

The Journal, as the organ of the Society, has a useful function in printing the worthwhile papers read at the State meetings, in reporting the transactions of Executive Sessions, and rendering the financial statements of the State Society.

As the State meeting was held recently, there can now be no dearth of material to present. Why cannot the pages be devoted exclusively to the affairs and transactions of our medical body and to interesting scientific topics and news?

The above-mentioned article is entirely out of place and should not have been intruded upon the members, more especially when the expense of setting and printing a thirteen-page paper is considered.

I respectfully request consideration of this protest.

Yours sincerely,
JOSEPH A. DILLON, M.D.

July 21, 1936

115 East 61st Street
New York City

To the Editor

It is trite to say that Medicine is an art as well as a science but reading the average medical journal filled with articles dealing with the brilliant advances made in the treatment of organic disease, one is likely to forget this. I therefore am sure that many of your readers welcomed the delightful article in your number of July 15 by Dr. Ira S. Wile, called "Life and Love."

The article, showing erudition, deep insight into human problems, and written in a delightful style, gives us a broader viewpoint and enables us to come back to the daily grind of treating our patients with more insight and a richer background. It is not only the Freudians who realize that the great love impulse makes for health when properly understood and handled, and for disease when misunderstood and inhibited. It cannot too often be emphasized.

Sincerely Yours,
SMILEY BLANTON, M.D.

August 4, 1936

Society Activities

Workmen's Compensation

MINIMUM MEDICAL FEE SCHEDULE FOR MEDICAL TREATMENT AND CARE OF INJURED EMPLOYEES

1 Section 13(a) (Workmen's Compensation Law) requires that the employer shall provide medical care for injured employees and that the Commissioner shall establish and promulgate "a schedule for the State, or schedules limited to defined localities, of minimum charges and fees for such medical treatment and care"—etc. And further, "All fees and other charges for such treatment and services shall be limited to such charges as prevail in the same community for similar treatment of injured persons of like standard of living"

2 This schedule specifically applies to Metropolitan New York comprising the following counties New York, Bronx, Kings, Queens, Richmond, Nassau, Suffolk, Rockland, Westchester

3 *Minimum Fees* Section 13-d 2 (d), requires that the Commissioner shall remove from the list of physicians authorized to render medical care any one who "has rendered medical service under this Chapter for a fee less than fixed by the Commissioner as the minimum rate in his locality" Section 13 (a) says, "The amounts payable by the employer for such treatment and services shall in no case be less than the fees and charges established by such schedule."

4 Nothing in this schedule shall prevent voluntary payment of amounts higher than the fees and charges fixed therein, but no physician rendering medical treatment or care may receive payment in any higher amount unless such increased amount has been authorized by the employer or by decision as provided in Section 13-g herein

5 Section 13-b 1 (g) Authorization of physician by Commissioner "No person shall render medical care under this Chapter without such authorization of the Commissioner" etc.

Exceptions

- A. Any licensed physician may render emergency care.
- B. Any member of a constituted hospital staff may render care while the patient remains within the institution
- C. Technical assistants when under active personal direction of an authorized physician.
- D. Registered physiotherapists under written specific direction of authorized physician.

6 No claim for medical or surgical treatment is valid or enforceable unless within 48

hours, (*) following first treatment, a preliminary report (C-104) is filed, and Within 20 days, (*) thereafter, a complete report (C-4) is filed.

Exceptions

Write "final" on the C-104 report if patient is discharged from treatment within 48 hours after first treatment. In these cases it will not be necessary to file Form C-4 unless specifically requested.

Write "Final and Transferred" to Dr. ——— Address ———, when case is referred, transferred or goes to another authorized physician for further care

7 *Emergency Claim* may need to be sustained by record of details that establish fact of emergency

8 *Payment of Medical Fees* Section 13-f No physician shall collect or receive a fee from the injured claimant. A hospital shall not be entitled to remuneration paid to a physician on its staff

Section 13-f (1) "Fees for medical services shall be payable only to a physician or other lawfully qualified person permitted by Section 13-b of this Chapter, or to the agent or to the executor or administrator of the estate of such physician"

Written Notice of Contest by the employer (or carrier) shall be filed of the amount of the bill for medical care or hospital service within 30 days after receipt of bill, or the right to an impartial examination of the fairness of the amount claimed "shall be deemed to be waived and the amount claimed by such physician or hospital shall be deemed to be the fair value of the services rendered by him or it."

9 *Disagreement* "as to value of medical aid rendered under this Chapter shall be decided by an arbitration committee." Section 13-g (2)

10 "A and A" means Authorization and Arrangement established by agreement between the physician and the carrier or employer. This designation has been applied where the extreme range of variation and complexity in the individual problem renders a fixed minimum standard impractical

11 *Concurrent Fees* for two or more physicians for an identical period of care and treatment will not be allowed except when war-

* Make triplicate record. Send one to your district office of the State Department of Labor (see back of blanks) Send one to carrier, if known, or employer Keep one for your record.

Established by the Industrial Commissioner of the State of New York in accordance with Chapter 258 and 930 of the Laws of 1935 amending the Workmen's Compensation Law—This Schedule applies only to New York, Bronx, Kings, Queens, Richmond, Nassau, Suffolk, Rockland, Westchester Counties

ranted by complication or noted need for assistance. When all the required care and treatment reasonably falls within the range of qualifications of one physician no other shall claim a fee, only one physician shall be in charge of a case. Fees for assistants and consultants must be justified

12 *Multiple Injuries* treated by one doctor requiring extensive surgical dressings or care are to be charged for the greatest plus one-half of the lesser fees but limited to two times the greatest fee. Superficial injuries not requiring extensive attention are not to carry cumulative charges

13 *Extensive and Unusual Dressings* When a patient requires unusual, extensive and extraordinary dressings, the cost of material (enumerated and noted in bill) may be added to schedule of fee for service.

14 *Unit Fees* When the schedule specifies a fee for a service and a period of after care, and for any reason there is a transfer of the care and treatment to a second or other physician, the stated amount in the schedule shall cover the combined fee of all

15 *Proration of Scheduled Unit Fee* When the schedule specifies a unit fee for a definite treatment and period of after care, and the patient is transferred from one to another physician, the employer (or carrier) is responsible for the amount stated in the schedule. If the concerned physicians agree upon amount of proration they shall render separate bills accordingly, in the event of no agreement or disagreement, the matter shall be settled by the Board of the local County Medical Society, or by an arbitration committee appointed by it—without cost to the contestants

16 Presence of physician during examination by employer's (or carriers) physician, routine fee.

17 Investigation and observation (without examination) by medical inspector acting for employer (or carrier), if presence of injured employee's physician is required by carrier or employer the fee to the employee's physician shall be \$4.00

18 Attending physician's appearance at a hearing on a compensation claim, when required by referee, insurance carrier or employer, a fee of \$10.00 plus mileage (outside New York City) and a fee of \$5.00 for each additional case on which the physician testifies at the same appearance.

19 Physician of "especially qualified" enrollment, who makes written opinion or testimony, fee fixed by Commissioner, Section 13 (d)

20 *Penalty Fees* "When transfer of patient by employer (or carrier) has not been authorized under this Section," Section 13-a (3) (2) Same as total paid to other physicians or as determined by arbitration committee.

21 Owners of plants requiring high frequency treatments may apply to the Industrial Commissioner for modification of the established fees in the medical fee schedule. The Commissioner will cause an investigation to be made in each instance and act upon the record

when established This privilege will be granted only on the assurance that it will not interfere with the employee's right of free choice of physician.

22 In all cases where there is a time limit, the attending physician is to give the necessary after-care required within his classification. Where exceptional conditions present themselves, the physician must obtain authorization to call in a specialist, except in an emergency

23 In order to facilitate the prompt payment of medical bills, a discount of 5 per cent will be allowed on all medical and hospital bills in amounts of \$15.00 or over, if paid within 30 days, except on controverted cases when the 30-day limit shall run from the date that a decision is rendered finding the claim compensable.

General Medico Surgical Service

Line No	Item	Fee
50	First visit, including reports	\$3 00
51	Office call	2 00
52	Home call—day	3 00
53	Home call—night (if call received by doctor between 12 M to 7 A M)	5 00
54	Hospital call	2 00
55	Consultation with specialist, same fee as regular visit.	
56	Salvarsan, plus cost of drug	5 00
57	Tetanus Antitoxin, add cost of drug to routine fee.	
58	Assistant to surgeon (In hospital with interne staff no charge to be made for service of interne or assistant)	15 00
59	Strapping of joints	
64	Strapping of shoulder, routine service fee plus	1 00
65	Strapping of hip routine service fee plus	1 00
66	Strapping of sacro-lumbar spine, routine service fee plus	1 00
67	Strapping of thorax, routine service fee plus	1 00

X RAY DEMONSTRATION OF INJURED PARTS

80	Lines Nos 83 to 102 inclusive represent fees for physicians with the 'X' qualification	
81	Such x-ray demonstration of injured parts is limited to those patients who are under his general medical care	
83	Fees are for regional examination—size and number of films not relevant	
84	Teeth, complete dental study	5 00
85	Single finger	2 50
86	Single toe	2 50
87	Hand (including fingers)	4 00
88	Wrist (including carpus and lower 1/3 forearm)	4 00
89	Forearm mid one third	4 00
90	Elbow (including upper one third of forearm and supra condyles)	4 00
91	Humerus mid one third	4 00
92	Foot (including toes)	4 00
93	Ankle (including lower three inches of leg)	4 00
94	Leg mid one-third	4 00
95	Knee (including four inches above and below joint)	4 00
96	Femur mid one third	4 00

97 Femur upper one third	\$4 00	160 Trephine	3 wks \$100 00
98 Shoulder joint	5 00	161 Clavicle, closed	3 wks. 40 00
99 Clavicle	5 00	162 Clavicle, open	A & A.
100 Scapula	5 00	163 Scapula	3 wks 40 00
101 Hip joint	7 50	164 Rib strapping	5 00
102 Nasal bones	5 00	165 Vertebrae, contiguous, bodies or laminae, closed	2 mos 100 00
103 Physical therapy, inclusive of any and all modalities	2 00	166 Vertebral processes non-operative	10 00
104 Electrocardiogram	10 00	167 Vertebrae, open	A & A.
105 Allergy test	A & A.	168 Humerus, closed	2 mos. 100 00
106 Immunology	A & A.	169 Humerus, open	2 mos 150 00
107 Spinal puncture	10 00	170 Radius or ulna, closed	2 mos. 50 00
108 Spinal puncture with manometric determination	15 00	171 Radius or ulna, open	2 mos 75 00
109 Blood transfusion, direct	50 00	172 Radius and ulna, closed—shaft	2 mos. 100 00
110 Blood transfusion indirect (citrate)	25 00	173 Radius and ulna, open—shaft	2 mos. 150 00
111 Fee for donor, Regular Blood Donors Association fee.		174 Colles fracture closed	2 mos. 65 00
112 Gastric lavage (poison, etc.)	10 00	175 Colles fracture, open	2 mos. 110 00
113 Burns, according to area involved and per visit	A & A.	176 Elbow (including humerus, radius and ulna), closed	2 mos 75 00
114 Skin patch test	A & A.	177 Elbow (including humerus radius and ulna) open	2 mos. 110 00
115 Abdominal paracentesis	10 00	178 Carpal bones, closed	2 mos. 50 00
116 Uterine Curettage, 3 weeks after care	50 00	179 Carpal bones, open	2 mos. 100 00
117 Injection, veno surgery	5 00	180 Metacarpals (one or more), closed	3 wks. 30 00
		181 Metacarpals (one or more), open	2 mos. 75 00
		182 Finger—one	3 wks. 20 00
		183 Fingers, multiple on one hand	3 wks 35 00
		184 Femur, closed	2 mos. 150 00
		185 Femur, open	2 mos. 175 00
		186 Patella, closed	3 wks. 50 00
		187 Patella open	6 wks. 100 00
		188 Tibia closed	2 mos 75 00
		189 Tibia, open	2 mos. 110 00
		190 Fibula, closed	2 mos. 50 00
		191 Fibula, open	2 mos. 75 00
		192 Tibia and fibula, closed	2 mos. 100 00
		193 Tibia and fibula, open	2 mos 150 00
		194 Potts fracture, closed	2 mos. 75 00
		195 Potts fracture, open	2 mos. 110 00
		196 Metatarsal bones, closed	3 wks. 30 00
		197 Metatarsal bones open	2 mos. 75 00
		198 Toes—single toe—first toe	3 wks. 20 00
		199 Toes—single toe—other than first	3 wks. 15 00
		201 Sacrum, closed	3 wks. 50 00
		202 Pelvis, one bone	3 wks. 50 00
		203 Pelvis, multiple	3 wks. 75 00
		204 Pelvis open	A & A.
		205 Os Calcis, closed	2 mos 50 00
		206 Os Calcis, open	2 mos. 100 00
		207 Astragalus, closed	2 mos. 40 00
		208 Astragalus open	2 mos. 80 00
		209 Tarsal bones, others, closed	2 mos. 30 00
		210 Tarsal bones, others, open	2 mos. 60 00
		211 Multiple fractures, not in same hand or foot Add to the greater fee a sum equal to 50 per cent of each lesser not exceeding two times the greater	

ANESTHESIA

125 *When given by other than operating surgeon Period of time to be measured from beginning of induction of anesthesia to recorded end of operation*

126 Gas, given by a medical anesthesiologist specially called, an additional fee of	5 00
127 Gas, first one-fourth hour	5 00
128 Gas up to one-half hour	10 00
129 Gas up to one hour	15 00
130 Gas each additional one half hour	5 00
131 Ether up to one half hour	5 00
132 Ether each additional one-half hour	5 00
133 Chloroform up to one half hour	5 00
134 Chloroform each additional one-half hour	5 00
135 Spinal for first hour	15 00
136 Spinal over one hour	20 00
137 Rectal, when performed by other than operator	15 00
138 Rectal over one hour	20 00
139 Intravenous anesthetic to one-half hour	10 00
140 Intravenous anesthetic to one hour	15 00
141 Intravenous anesthetic over one hour	20 00
142 <i>Local anesthesia by operator is part of operating fee, as scheduled</i>	

FRACTURES

150 Compound fractures—increased fee 50%	
	<i>After Care</i>
151 Skull operative, not within dura	3 wks. 100 00
152 Skull involving work within dura	3 wks. 150 00
153 Skull non-operative, at per visit basis.	3 wks 35 00
154 Maxilla, closed	3 wks 50 00
155 Mandible (uncomplicated) unilateral	3 wks 100 00
156 Mandible (uncomplicated) bilateral	3 wks 35 00
157 Malar	3 wks 25 00
158 Nose	A & A
159 Nasal septum	

12 *Multiple injuries treated by one doctor requiring extensive surgical dressings or care, are to be charged for the greatest plus one half of the lesser fees but limited to two times the greatest fee. Superficial injuries not requiring extensive attention are not to carry cumulative charges*

15 *Proration of scheduled unit fee When the schedule specifies a unit fee for a definite treatment and period of after-care and the patient is transferred from one to another physician the employer*

(or carrier) is responsible for the amount stated in the schedule. If the concerned physicians agree upon amount of proration they shall render separate bills accordingly, in the event of no agreement or disagreement, the matter shall be settled by the Board of the local County Medical Society, or by an arbitration committee appointed by it—without cost to the contestants.

22 In all cases where there is a time limit, the attending physician is to give the necessary after-care required within his classification.

Where exceptional conditions present themselves, the physician must obtain authorization to call in a specialist, except in an emergency.

DISLOCATIONS

250	Temporo-mandibular		\$10 00
251	Spine, open	6 mos.	150 00
252	Spine, closed	2 mos	100 00
253	Shoulder	3 wks	40 00
254	Shoulder, recurrent—operation		A & A.
255	Elbow, closed	3 wks	35 00
256	Elbow, open	3 wks	75 00
257	Finger, reduction and splint		5 00
258	Finger, open	3 wks	40 00
259	Hip	3 wks.	75 00
260	Knee	3 wks	60 00
261	Ankle	3 wks	40 00
262	Astragalus, closed	3 wks.	50 00
263	Astragalus open	2 mos	100 00
264	Os Calcis, closed	3 wks.	50 00
265	Os Calcis, open	2 mos.	100 00
266	Toe, reduction and splint		5 00

AMPUTATIONS

275	Arm, disarticulation, uncomplicated	6 wks	150 00
276	Arm, thru head or neck	6 wks.	100 00
277	Arm, below neck	6 wks.	75 00
278	Forearm	6 wks.	75 00
279	Hand at wrist	6 wks.	75 00
280	Carpus	6 wks	60 00
281	Metacarpus	6 wks	50 00
282	Phalanx	6 wks	30 00
283	Thigh, disarticulation	6 wks	150 00
284	Leg at knee	6 wks.	100 00
285	Patella excision	6 wks	75 00
286	Femur, head and neck	6 wks	150 00
287	Femur	6 wks	100 00
288	Knee	6 wks.	100 00
289	Tibia or fibula	6 wks	100 00
290	Foot at ankle joint	6 wks.	75 00
291	Foot thru metatarsus	6 wks	75 00
292	Os Calcis (Syme's amp.)	6 wks	100 00
293	Phalanx (toe)	6 wks	30 00
294	Astragalectomy	2 mos	100 00
295	Laminectomy or other osteoplastic	2 mos.	200 00
296	Coccyx, removal	3 wks.	50 00
297	Spinal fusion, involving bone inlay	2 mos	200 00
298	Removal of semi-lunar cartilage	2 mos.	100 00
299	Rib excision or resection	3 wks	50 00
300	Arthrodesis hip	2 mos.	150 00
301	Arthrodesis wrist	2 mos.	100 00
302	Arthrodesis knee	2 mos.	100 00
303	Arthrodesis shoulder	2 mos.	100 00
304	Bone graft—for non union of femur including post-operative therapy	4 mos	200 00

305	Bone graft—for non union of tibia, including post-operative therapy	4 mos	\$175 00
306	Bone graft—humerus, including post-operative therapy	4 mos.	175 00
307	Bone graft—forearm, including post-operative therapy	4 mos.	175 00

Surgical Procedures

INCISION

325	Incision for superficial abscess as furuncle or boil		3 00
326	Incision for abscess, carbuncle with multiple pockets		5 00
327	Incision of deep abscess or infection		25 00
328	Paronychia		5 00
329	Laparotomy, exploratory only	3 wks	100 00
330	Operation on viscera		A & A.
331	Simple bowel resection	3 wks.	150 00

EXCISION

350	Removal of nail finger or toe, including local anesthetic		5 00
351	Excision of sub-deltoid bursa	3 wks	50 00
352	Excision of pre patella bursa	3 wks	35 00

REPAIR

365	Tendon one primary	3 wks.	35 00
366	Tendon, each additional		10 00
		maximum	100 00
367	Tendon, secondary		A & A.
370	Nerve suturing primary single	3 wks	35 00
371	Nerve suturing, each additional		10 00
		maximum	100 00
372	Nerve suturing secondary		A & A.
375	Hernia, single (including assistant's fee)	8 wks.	75 00
376	Hernia, double (including assistant's fee)	8 wks	100 00
377	Hernia, recurrent		A & A.
379	Hernia, diaphragmatic		A & A.
380	Hernia, post surgical (including assistant's fee)	8 wks	100 00
381	Hernia, ventral (including assistant's fee)	8 wks	100 00
385	Suture of soft tissue wound, such as—		
386	Skin Routine fee plus \$1 00 for each suture	maximum	10 00
387	Fascia Routine fee plus \$1 00 for each suture	maximum	10 00
388	Muscle Routine fee plus \$1 00 for each suture	maximum	10 00
390	Superficial lacerations Office visit		

FOREIGN BODIES

392	Foreign body extraction intra cutaneous Office fees		
393	Foreign body extraction sub-cutaneous without anesthetic		5 00
394	Foreign body extraction, sub-cutaneous, with anesthetic		10 00
395	Foreign body extraction, deep	3 wks.	25 00
396	Note Above extractions do not include removal of foreign body from eye or orbit		

Consultations and Consultant Care

'SG' QUALIFICATION

400	Urologist consultation fee, complete, but not inclusive of cystoscopy, x-ray demonstration		15 00
401	Urologist, subsequent office or hospital visits, exclusive of after care as specified		3 00

"SI" QUALIFICATION

410 Neurologist, complete examination	
411 Neurologist, for subsequent diagnostic consultation	\$20 00
412 Neurologist, for other subsequent office visits	5 00

"SJ" QUALIFICATION

420 Internist, complete examination or consultation	3 00
421 Internist, subsequent office visits	10 00

"SB" QUALIFICATION

425 Orthopedist, complete examination or consultation	3 00
426 Orthopedist, "check up" examination of referred patient	10 00
427 Orthopedist, subsequent examination or care not included in scheduled "after care"	5 00

"SA" QUALIFICATION

430 Surgeon, complete examination or consultation	3 00
431 Surgeon "check up" examination of referred patient	10 00
432 Surgeon, subsequent examination or care not included in scheduled after care	5 00

"SC" QUALIFICATION

438 Surgeon, first care if not otherwise scheduled	2 00
439 Surgeon, subsequent office visits or hospital visit	3 00
440 Surgeon, patient's home or place of employment. Day	2 00
441 Surgeon patient's home or place of employment Night, 12 Midnight to 7 A. M.	3 00

Ear, Nose and Throat**"SF" QUALIFICATION**

450 Nose, complete examination with consultation and report	
451 Nose, routine examination with consultation	10 00
452 Nose, extensive study, various charges according to special tests	5 00
453 Nasal bones fractures	A & A
454 Submucous resection of nasal septum	3 wks. 25 00
455 Otoscopic examination, including functional test of cochlea	2 wks. 75 00
456 Ear examination, including functional tests of cochlea and labyrinth	10 00
457 Direct laryngoscopy instrumentation with laryngoscope (inclusive of removal of foreign body of biopsy)	A. & A.
458 Direct laryngoscopy, removal of growth	25 00
459 Bronchoscopy	1 wk. 50 00
460 Bronchoscopy, with removal of biopsy	1 wk. 50 00
461 Bronchoscopy, with foreign body extraction	50 00
462 Esophagoscopy	75 00
463 Esophagoscopy, with removal of biopsy	50 00
464 Esophagoscopy, with foreign body extraction	75 00
465 Tonsillectomy	1 wk. 40 00
466 Tracheotomy	3 days 75 00

467 Mastoid—simple*	3 wks. \$100 00
468 Mastoid—radical*	3 wks. 150 00
469 Mastoid—bilateral	3 wks. 225 00
471 Antrotomy puncture with irrigation	10 00
472 Antrotomy—window	3 wks. 50 00
473 Antrotomy—radical	A. & A.
474 Antrotomy—subsequent irrigations	5 00
475 Epistaxis, arrest of bleeding, office visit	
476 Epistaxis, with electrocoagulation or electrocauterization	10 00
477 Epistaxis, without electrocoagulation, office visit	
478 Myringotomy, in office (puncture)	5 00
479 Myringotomy, at hospital or home or other place	10 00
480 Subsequent office visits	3 00
481 House visit, routine, for examination and opinion	5 00
482 Hospital visit, for ordinary visit, dressings and observation	3 00

Eye**"SE" QUALIFICATION**

525 Simple eye check up on referred patients, mere observation (no refraction, no study of retina)	5 00
526 Routine, full examination	10 00
527 Special study, special test for permanent disability and report	A & A.
528 Refraction alone and prescription for glasses	7 50
529 Combined full examination (526 and 528) and refraction and prescription for glasses	12 50
530 Subsequent office visit	3 00
531 Hospital visits	3 00
535 Foreign body embedded in cornea, removal of	5 00
536 Removal of intra-ocular foreign body	21 days 100 00
537 Removal of intra-orbital foreign body	21 days 100 00
560 Primary suture of lid wounds	15 00
561 Iridectomy	10 days 60 00
562 Cataract extraction	10 days 100 00
563 Muscle operation	A. & A.
564 Plastic lid operation	A & A.
568 Dissection (needling) of cataract	10 days 75 00
569 Operation for detachment of retina	10 days 100 00
570 Enucleation of eyeball	21 days 100 00
571 Evisceration of eyeball	21 days 100 00
572 Conjunctivokeratoplasty for perforating wounds of eyeball	A. & A.
575 Glaucoma operation	10 days 100 00
576 Operation for strabismus	A. & A.
577 Dacryocystectomy	10 days 75 00
578 Chalazion operation, either dissection or incision and curettage	15 00

Urology**"SG" QUALIFICATION**

600 Neo-salvarsan plus cost of drug	7 50
601 Excision of kidney	3 wks. 150 00

* RADICAL MASTOID—fee allowed only when mastoid and middle ear cavities are made one—bony wall removed.

602	Fixation of kidney		A. & A.
603	Kidney calculi removal	3 wks	\$150 00
604	Nephrotomy	3 wks	100 00
605	Cystotomy	3 wks	75 00
606	Cystoscopy without X ray		25 00
607	Cystoscopy including catheterization ureters		35 00
608	External Urethrotomy		A & A
609	Hydrocele—radical	3 wks	50 00
610	Hydrocele—tapping		10 00
611	Orchidectomy	3 wks	60 00
612	Epididymectomy	3 wks	75 00

Dermatology

"SH" QUALIFICATION

650	Examination, complete, or consultation		10 00
650a.	Check up examination of referred patient		5 00
651	Subsequent examination or care		3 00
652	Subsequent care, with X ray therapy		5 00
653	Hospital visit		3 00
654	Neo-salvarsan, plus cost of drug		7 50

Proctology

SM8' QUALIFICATION

665	Anal fissure, division under anesthesia		15 00
666	Single fistula including 3 weeks after care		50 00
667	Multiple fistulae including 3 weeks after care		75 00
668	Hemorrhoids removal by injection, per visit		5 00
669	Hemorrhoids, external, single, 2 weeks after care		25 00
670	Hemorrhoids multiple external 2 weeks after care		50 00
671	Hemorrhoids internal, 2 weeks after care		50 00
672	Incision of thrombosed hemorrhoid		10 00
673	Prolapse, anal, treatment by laparotomy including 3 weeks after care		150 00
674	Rectal resection, including 4 weeks after care		150 00

Physical Therapy

SM1 QUALIFICATION

690	Per visit, inclusive of any and all modalities		3 00
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'OP' QUALIFICATIONS

Lines Nos 691 to 695 apply only when osteopathic manipulation is included			
691	Examination or consultation at office—first visit		4 00
692	Subsequent office visits		3 00
693	Home call—day		4 00
694	Home call—night (between 12 midnight and 7 a.m.)		5 00
695	Hospital call		3 00
696	As respects all other items in this schedule which come lawfully within the scope of osteopathy osteopaths shall be entitled to the same fees as permitted for physicians practicing in other fields of medicine		

Pathology

BLOOD

700	Wassermann		5 00
701	Wassermann—any modifications		5 00

702	Precipitation (Kahn or other precipitation test)		\$3 00
703	Any two tests of the above		7 50
704	Complement fixation gonococcus		3 00
705	Full blood count		5 00
706	White blood count and differential		2 00
707	Coagulation time		2 00
708	Sedimentation test		3 00
709	Fragility test		3 00
710	Platelet count		2 00
711	Full test—hemorrhagic diathesis		10 00
712	Icteric index		2 00
713	Special culture	A. & A.	
714	Widal		3 00
715	Simple culture		5 00
716	Bilirubin VandenBergh		3 00
717	Malaria (plus red blood count)		2 00
718	Typing and grouping		5 00
719	Cross agglutination tests		5 00
720	Additional per person		2 00
721	Urea nitrogen		2 00
722	Noncoagulation nitrogen		2 00
723	Uric acid		3 00
724	Cholesterol		3 00
725	Creatinine		3 00
726	Sugar		2 00
727	Co2		2 00
728	Any four tests of the above		7 50
729	Calcium		3 00
730	Magnesium		3 00
731	Phosphorus		3 00
732	Chlorides		3 00
733	Any three of the above		7 50
734	Lactic acid		3 00
735	Hydrogen ion concentration		3 00
736	Albumin globulin ratio		7 50

URINE

740	Routine—chemical qualitative without microscopic		\$1 00
741	Routine—chemical qualitative with microscopic		2 00
742	Routine—chemical and microscopic including quantitative sugar		3 00
743	Arsenic or lead (heavy metals)	A. & A.	
744	Quantitative urea		2 00
745	Quantitative creatinine		2 00
746	Quantitative uric acid		2 00
747	Quantitative ammonia		2 00
748	Quantitative chlorides		2 00
749	Quantitative total nitrogen		2 00
750	Above five tests		10 00
751	Phthalein		2 00
752	Urobilin quantitative		3 00
753	Tyrosin		3 00
754	Mosenthal or other conc. tests		5 00
755	Simple culture		5 00
756	Special culture	A & A	
757	Ureter specimens urea, microscopic plus cultures both sides		15 00
758	Tuberculosis—extra		3 00
759	Animal inoculation		10 00

CEREBROSPINAL FLUID

765	Wassermann		5 00
766	Precipitation		3 00
767	Colloidal Gold Test		3 00
768	Cell Count		2 00
769	Globulin		2 00
770	Simple culture		5 00
771	Special culture	A & A	
772	Smear for Bacteria		2 00
773	Tubercle Bacilli		3 00
774	Twelve hour sedimentation test		5 00
775	Full spinal fluid examination for syphilis (Wassermann Colloidal Gold Cells-Globulin)		7 50
776	Animal inoculation		10 00

FROZEN SECTION

781 Frozen section in hospital (pathologist at operation)	\$15 00
782 Frozen section, outside	A & A

MISCELLANEOUS ITEMS

790 Throat culture	3 00
791 Smears—all—except otherwise stated	2 00
792 Search for bacilli in exudates	3 00
793 Sputum for tubercle bacilli	3 00
794 Simple sputum culture	5 00
795 Special sputum culture	A & A
796 Sputum microscopic	2 00
797 Vaccines Sputum	7 50
798 Typing of pneumococcus	5 00
799 Dark field—no charge for smear, venereal, etc	5 00
800 Stomach contents for ferments	5 00
801 Ewald or retention	5 00
802 Fractional Refhus	5 00
803 Bacteriophages	A & A.
804 Calculi	A & A

FECES

810 Parasites	3 00
811 Typhoid and para cultures	5 00
812 Microscopic for bacteria, etc	3 00
813 Urobilin	3 00
814 Urobilin quantitative	5 00
815 Histamine	3 00
816 Occult blood only	2 00
817 Ferments	5 00
818 Simple culture	5 00
819 Special culture	A & A
820 Fats—quantitative	5 00
821 Basal metabolism	10 00
822 Immunology and allergy	A & A.
823 Spinal puncture	10 00
824 Spinal puncture with manometric determination	15 00
830 Complete post mortem and report, without microscopic work	50 00
831 Complete post mortem and report, with tissue microscopic examination	75 00
832 Other post mortem laboratory work, as scheduled above.	
835 When pathologist visits patient's home or other place to obtain specimen add \$3.00 for home visit to the above items	
836 The attending physician will not make charge for obtaining specimen except spinal puncture	

Roentgenology and Radiology

'SD' QUALIFICATION

850 Lines 850 to 945 inclusive specify fees for physicians who are qualified as SD

851 (Instructions do not file either C 104 or C 4 reports. In stead, make written report in quadruplicate having one notarized and sent to your district of the State Department of Labor send one to the attending physician or surgeon retain one for record. Render separate bill to carrier, if known or employer with the report. Films shall be preserved by roentgenologist and they (or satisfactory prints) shall be made available to attending physician, carrier or employer.)

852 Fees are for a competent diagnosis by x ray image, expert interpretation and opinion—size and number of films not relevant

853 Single finger	\$5 00
854 Single toe	5 00
855 Hand (including fingers)	8 00
856 Wrist (including carpus and lower one-third of forearm)	8 00
857 Forearm mid one-third	8 00
858 Elbow (including upper one-third of forearm and supra condyles)	8 00
859 Humerus mid one-third	8 00
860 Foot (including toes)	8 00
861 Ankle (including lower three inches of leg)	8 00
862 Leg mid one-third	8 00
863 Knee (including four inches above and below joint)	8 00
864 Femur mid one-third	8 00
865 Femur upper one-third	10 00
870 Shoulder joint	10 00
871 Clavicle	10 00
872 Scapula	15 00
873 Hip joint	
875 Head and face, complete examination	20 00
876 Head and face, partial examination for follow up when area of injury has been demonstrated previously	10 00
880 Nasal bones	10 00
881 Nasal sinuses	15 00
882 Mastoids	15 00
883 Mandible—one side	10 00
884 Cervical spine	15 00
885 Dorsal spine	15 00
886 Lumbar spine	15 00
887 Pelvis	15 00
888 Sacro-iliac joint and coccyx	25 00
889 Any two spinal regions	35 00
890 Any three spinal regions	
891 Sacro-iliac (including lumbosacral facets)	A. & A
900 Thoracic cage (not including spine) any one area	15 00
901 Lungs and heart (not including cardiac mensuration)	15 00
902 Cardiac mensuration (including fluoroscopy)	15 00
903 Abdomen and gastrointestinal flat plate for acute obstruction	15 00
904 Esophagus only (including fluoroscopy)	15 00
905 Gastro intestinal (esophagus to cocum)	25 00
906 Gastro-intestinal (esophagus to ampulla)	35 00
907 Colon by opaque enema	20 00
908 Gall bladder simple	15 00
909 Gall bladder, Graham test, oral	25 00
909a Intravenous or Stewart concentrate	35 00
910 Genito-urinary—simple	15 00
911 Genito-urinary — retrograde pyelography (not inclusive of injection)	15 00
912 Genito urinary—pyelography by excretion	25 00
913 Teeth—complete dental study	10 00
914 Foreign body, same as part involved	
915 Foreign body—search of respiratory or alimentary canal	20 00
916 Foreign body—eye, precise localization	25 00
917 Bedside — institutional — add 15% to normal fee for part	

SOCIETY ACTIVITIES

ing immediate emergency medical aid, an ambulance or any physician may be called to give first aid treatment.

4 Homeopathic and osteopathic societies and boards should receive applications from homeopaths and osteopaths only and recommend for authorization to treat workmen's compensation cases only homeopaths and osteopaths.

5 All specialists, consultants, etc., shall submit a report of their findings in triplicate, one copy to the Industrial Commissioner, one to the attending physician, and one copy to the employer or insurance carriers. If the specialist acts as attending physician, he should file a 48-hour report with the employer or carrier and with the Industrial Commissioner.

6 A registered physiotherapist may treat workmen's compensation cases at his own office or bureau when the case is referred to him by an authorized physician. The authorized physician should, however, give written directions to the physiotherapist as to the kind of treatment to be rendered and the number of treatments to be given. These directions must be given in writing by the physician and shall constitute a part of the record of the case.

7 Removal of physicians from panels Section 13-d.

(a) The doctor accused of misconduct shall be notified of the charges in writing by the Medical Society or Board that recommended him. He shall also be notified as to the date and time of the hearing.

(b) Careful records shall be kept of the minutes of the hearing.

(c) These records together with the report of the Board of the Medical Society or other Board, with its findings, shall be submitted to the Commissioner. Appeal by physicians to the Industrial Council to be referred to a Sub-Committee to report findings to Council.

(a) The doctor appealing and the Medical Society or other Board shall be notified in writing as to the date of the hearing.

(b) The doctor may be represented by counsel.

(c) Accurate stenographic or stenotype minutes of the hearing shall be kept for the files of the Commissioner and Industrial Council.

(d) Findings of the Committee shall be submitted to the Industrial Council for final action.

8 Arbitration of medical bills. A panel of physicians is to be appointed by the president of each County Medical Society, who shall submit the names of the physicians on the panel to the Industrial Commissioner. The Commissioner shall, when arranging hearings on medical bills, select two members of each arbitration committee from this panel and two physicians are to be selected by the employer or insurance carrier from the membership of the Medical Society of the State of New York, qualified under this Act, for each arbitration session the Industrial Commissioner to set the dates for all hearings and notify all interested parties. The arbitration committee shall submit to the Industrial Commissioner its decisions, on a form prescribed and provided by the Industrial Commissioner, who will then forward notice of decision to all interested parties. If the physician whose bills are being arbitrated is a member in good standing and duly qualified by the New York Osteopathic Society or the New York Homeopathic Society, the members of such arbitration committee are to be appointed similarly and shall consist of physicians of such organizations, the president of such organizations to make the designation provided herein.

In the event of disagreement as to the value of medical services rendered, a hearing shall be held in the county in which the doctor practices or in which his main or principal office is located. Notice of this hearing shall be sent to the doctor or hospital who rendered the services, the employer and the insurance carrier, any of whom may appear or be represented if they so desire. The arbitration board shall pass upon the matter in dispute in accordance with Section 13-g of the amended law. Careful records of the hearing shall be kept in the office of the County Medical Society.

In the event of disagreement as to the value of medical services rendered by members of the New York Osteopathic Society, a hearing shall be held at a location convenient to the interested parties. The Industrial Commissioner is to select two members from the panel of New York Osteopathic Society, for each arbitration session, and the employer or his insurance carrier is to select two arbitrators from the membership of the New York Osteopathic Society who have been duly qualified under this Act.

The arbitration committee shall pass upon the matter in dispute in accordance with Section 13-g of the amended law.

Careful records of the hearing shall be kept in the office of the New York Osteopathic Society.

9 In the event of rejection of a physician by a County Medical Society or other Board, the jurisdiction of the County Medical Society or other Board has terminated, and it cannot reconsider its action. Each County Medical Society or other Board must pass upon the application of each physician within 30 days of the receipt of the application and notify the Industrial Commissioner of its action.

10 Bills for x-rays and consultations shall be submitted for payment directly to the employer or carrier by the specialist rendering the service.

11 A hospital may not secure a license to operate a medical bureau to render care to reduce the size of notice to employees (Form C-105), which is to be placed in all places of employment covered by the Act, unless such permission is granted on application to the Industrial Commissioner.

13 Physicians treating claimants in hospitals may secure the signature of claimant for authorization to obtain copies of any necessary hospital records.

14 The physician in attendance in public

1238	Gastro-intestinal (esophagus to cocum)	18 00
1239	Gastro intestinal (esophagus to ampulla)	26 00
1240	Colon by opaque enema	15 00
1241	Gall bladder, simple	11 00
1242	Gall bladder, Graham test, oral	15 00
1243	Intravenous or Stewart concentrate	26 00
1244	Genito-urinary—simple	11 00
1245	Genito urinary—retrograde pyelography (not inclusive of injection)	11 00
1246	Genito urinary—pyelography by excretion	18 00
1247	Teeth, complete dental study	8 00
1248	Foreign body, same as part involved	15 00
1249	Foreign body, search of respiratory or alimentary canal	18 00
1250	Foreign body—eye, precise localization	18 00
1251	Bedside—institutional—add 15 per cent to normal fee for part.	A &A.
1252	Bedside—domicile	A &A.
1253	Interpretation of films made elsewhere	A &A.
1254	Radium therapy	A &A.
1255	X ray therapy	A &A.
1256	When patients are treated by x ray or radium C 104 and C 4 must be filed	
(Lines 1257—1300 are blank)		

Key to Code Letters

- X—General practice
- S—Practice limited to specialty
- A—General surgery—major
- B—Orthopedic surgery
- C—Traumatic surgery—not inclusive of major or open procedures unless also qualified under A or B
- D—Roentgenology (1) and/or radiation (2)
- E—Ophthalmology
- F—Laryngology (1), rhinology (2), otology (3)
- G—Urology
- H—Dermatology (1) and/or syphilology (2)
- I—Neurology (1) and/or psychiatry
- J—Internal medicine.
- K—Pathology (1) clinical pathology (2), bacteriology (3), chemistry (4), serology (5), and/or hematology (6)
- L—Gynecology (1) and/or obstetrics (2)
- M (1)—Physical therapy
- M (2)—Tuberculosis and lung diseases
- M (3)—Gastroenterology
- M (4)—Cardiology
- M (5)—Minor surgery
- M (6)—Anesthesia
- M (7)—Plastic surgery
- M (8)—Proctology
- M (9)—Neuro surgery
- M (10)—Public health and industrial diseases
- M (11)—Metabolic diseases
- M (12)—Immunology and allergy
- M (13)—Bronchoscopy
- M (14)—Endocrinology
- M (15)—Oral surgery
- M (16)—Vascular and veno-therapy
- M (17)—All others

Rules and Regulations

Promulgated by the Industrial Commissioner covering Chapters 258 and 930 of the Laws of 1935 amending the Workmen's Compensation Law

"§ 10-a Industrial Council * * *

"4 The Council shall (a) consider all matters submitted to it by the Industrial Commissioner and advise him with respect thereto, (b) on its own initiative recommend to the Commissioner such changes of administration as, after consideration, may be deemed important and necessary * * *, (d) consider all matters connected with the practice of medicine submitted to it by the Commissioner or the Industrial Board, (e) consider the qualifications for, or persons being considered for appointment by the Commissioner to positions directly involving the practice of medicine, and advise the Commissioner regarding the fitness of such persons for appointment, (f) prescribe rules and regulations to govern the procedure of investigations and hearings by the Medical Societies or Boards of charges against authorized physicians and licensed compensation medical bureaus as provided in Section 13-d of the Workmen's Compensation Law, (g) investigate on its own initiative charges made by a physician that he has been improperly refused authorization to do compensation work by a Medical Society or Board, or by the Commissioner, and, if it sustain the charges, recommend such authorization to the Commissioner, (h) on its own initiative investigate and pass on charges of misconduct by either a physician or a compensation bureau authorized to treat injured workmen under this chapter, (i) review the determination of charges of misconduct where the physician accused appeals from the decision of the Medical Society or Board which took jurisdiction in the first instance. In such cases the Council may reopen the matter and receive further evidence. And the decision and recommendation of the Council shall be final, binding and conclusive upon the Industrial Commissioner

"5 The Council shall adopt Rules and Regulations to govern its own proceedings. The Secretary shall keep a complete record of all its proceedings which shall show the names of the members present at each meeting and every matter submitted to the Council by the Commissioner and the action of the Council hereon. The record shall be filed in the office of the Department. All records and other documents of the Department shall be subject to inspection by the members of the Council" Chapter 258, Laws of 1935

1 All doctors whose applications have been disapproved by the various County Medical Societies may continue to treat workmen's compensation cases until a final decision is rendered by the Industrial Council

2 All reports, except Form C-104, filed by attending physicians and specialists should be verified before a Notary Public or a Commissioner of Deeds, to insure their value as prima facie evidence in a compensation case.

3 In the event of a serious accident requir-

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested

Albany County

DR. FREDERICK L. PATRY has left the State Education Department to engage in private practice in Albany.

OUTSTANDING PERSONS in the medical and scientific fields from all parts of the world will hear a discussion led by Dr. Robert E. Plunkett, General Superintendent of Tuberculosis Hospitals, State Department of Health, at the tenth conference of the International Union Against Tuberculosis at Lisbon, Portugal, Sept. 7-10.

On Sept. 9, he will discuss "Primary Tuberculosis in the Adolescent and the Adult," in English, on a paper by Dr. Olaf Sheel, Norway. Dr. Plunkett will appear before the group as a representative of the National Tuberculosis Association of the United States of America.

Allegany County

THE ALLEGANY County Medical Society held an interesting meeting on July 30 at the County Home at Angelica.

Broome County

DR. JOSEPH J. KANE, for thirty years a leading surgeon of Binghamton, died at his home on July 20. He was fifty-seven. President and Chief of Staff of Our Lady of Lourdes Hospital, he was active in medical, educational and religious circles. He was formerly chairman of the medical division of the Binghamton City Hospital, president of the board of the County Tuberculosis Hospital, president of the Broome County Medical Society, and New York State Regent of the American College of Surgeons.

DR. WILLIAM FLETCHER WALLING, who had practiced medicine thirty years in Binghamton, died on July 11 at his summer home at Heart Lake, Pa. He was sixty-six.

Cattaraugus County

A HOLE-IN-ONE on the sporty Elkdale Country Club golf links was made on the Fourth of July week-end by Dr. J. Louis Preston, Salamanca surgeon. He dropped his tee-shot on the 175 yard ninth hole. It was the doctor's first hole-in-one and the first made on the Elkdale course in six years. Dr. Charles A. Lawler, another Salamanca physician, having pulled the stunt in 1930 on number four hole, which is a 160 yard pitch.

Chautauqua County

DR. JOHN S. HICKMAN entertained a large group of doctors from Jamestown and vicinity at dinner on July 21 in the Hotel Jamestown to meet Dr. James G. Carr, Chicago heart specialist, and professor of medicine at Northwestern University School of Medicine during the host's student days. Dr. Carr gave one of the Medical Day lectures at Chautauqua, sponsored by the Chautauqua County Medical Society.

Jefferson County

ACTION UPON THE SUGGESTION of Mayor David D. Kieff, the Watertown city council voted on July 20 to name a committee to investigate what Mayor Kieff explained was "an increasingly high cost of doctors' and hospital bills for welfare patients in the city."

The committee is expected to secure the aid of a medical adviser and report its findings. Then, it was indicated by Mayor Kieff, some action to curtail this expense will likely be taken.

Kings County

AN ATTACK on the practice of medicine by hospitals as "unfair incorporated competition" with physicians is included in a report to the Kings County Medical Society by Dr. Nunzio A. Rini, acting chairman of the society's economics committee, published in the society's monthly bulletin.

Dr. Rini's report condemns in general terms "the pressure exerted upon medical staff boards to meet and pass resolutions repudiating the Moran-Esquiroil bill" in the 1936 Legislature which would have barred hospitals from practicing medicine. This "pressure," according to Dr. Rini, was "thinly veiled and naive intimidation."

Assemblyman Edward S. Moran, Jr. of Brooklyn, co-sponsor of the measure said that the bill, introduced originally at the request of the medical society, was withdrawn mainly because of the avalanche of protests which descended on Albany from hospital authorities.

Monroe County

TWO MEMBERS of the faculty of the Medical School of the University of Rochester are receiving gratifying recognition in English academic and scientific circles this year. Dr. George W. Corner is the first

hospitals must be the judge as to when the "emergency status" of the case has terminated. In case of a dispute, the matter shall be referred to the Compensation Board of the Medical Society of the county in which the hospital is located, for immediate decision.

15 Medical inspectors of insurance companies shall be admitted to hospitals or other institutions where injured employees are confined, upon proper identification, for the purpose of complying with Section 13-j.

16 No license is necessary to operate a first aid station for emergency treatments, but no subsequent treatments are to be rendered by anyone other than a qualified physician.

17 The physician in attendance must seek authorization for a specialist first from the employer or carrier. If unable to secure it, he may apply to the Industrial Commissioner in accordance with Section 13-a-5.

18 The authority of an employer for the services of a specialist in excess of a \$2500 fee, applies only to the necessity for such services, but the choice of such specialist is entirely within the jurisdiction of the injured worker.

19 All medical bureaus and laboratories in operation on July 1, 1935, shall be charged a license fee, effective July 1, 1935, to and including June 30, 1936.

20 When it is in the interest of the injured employee, and where an x-ray is required and it is impossible to secure the services of a qualified x-ray specialist, the Board of the local County Medical Society may designate a specially qualified individual to take x-ray pictures under the supervision of the attending physician. The attending physician, however, shall render a bill for such service to the employer. This in no way, however deprives the employer or insurance carrier from having other x-ray pictures taken if they so desire.

21 No advertising matter of any nature, on compensation work, by authorized physicians,

medical bureaus, or laboratories, will be permitted.

22 All County Medical Societies and other Boards shall be instructed to first investigate all complaints submitted to them, and if the evidence warrants it, charges shall be preferred against the physicians, after which the physicians shall be notified in writing of the charges, as well as given a bill of particulars, so that they may be in a position to defend themselves properly at the hearings.

23 Physicians authorized to treat workmen's compensation cases, when requested to supersede another physician must, before beginning treatment of such patient, make reasonable effort to communicate with the attending physician to ascertain the patient's condition. The superseding physician must also advise the attending physician of the name of the person who has requested him to assume care of the case and state the reason therefor. If the second physician cannot contact the attending physician, and the claimant's condition requires immediate treatment, the said physician should advise the doctor previously in attendance, within 48 hours, that he now has the patient in his care.

24 Hospitals shall render bills for board and room accommodation, medical and surgical supplies, nursing facilities, and routine laboratory service. Bills for all services rendered by physicians in hospitals, including physiotherapy, x-ray, pathology, anesthesia, medical and surgical care, etc., shall be made out separately and paid directly to the doctor rendering the service.*

25 All medical reports filed by attending physicians and specialists must contain the authorization certificate number and code letters

ELMER F. ANDREWS,
Industrial Commissioner

January 3 1936

* This rule is now (May 1 1936) under the consideration of the Industrial Council for revision.

The Physicians' Home

The Physicians' Home, which was originally incorporated on June 4, 1919, was reorganized on April 15, 1936, with a new constitution and by-laws and a more effective organization.

It is planned by the new officers, trustees and directors to make a vigorous effort to finance this worthy project so as to build a permanent home for aged and infirm physicians of the State of New York.

Ever since this Home was founded there has always been a long waiting list but inadequacy of income has rendered it impossible to accept as guests all the elderly physicians who have applied. It soon became apparent to the new officers and trustees that the existing policy must be abandoned in favor of a permanent home with adequate endowment. The present endowment is approximately \$130,000.

Five types of membership in the organization have been created and are now open for application and registration.

Annual Member	\$10 or more
Sustaining Member	\$100 to \$1,000
Life Member	\$1,000 to \$5,000
Patron	\$5,000 to \$10,000
Benefactor	\$10,000 or more

Make checks payable to the Treasurer of the Physicians' Home, Inc., and mail with application to B. Wallace Hamilton, M.D., Treasurer, 52 East 66 Street, New York.

The Physicians' Home, is a worthy medical public service, and should enlist the sympathetic cooperation of all members of the medical profession as well as the profession's non-medical friends.

We appeal to you to further the object of this organization, "To create and maintain a Home for aged and infirm physicians, their wives or widows, or to assist in any other way found feasible."

CHAS. GORDON HEYD, M.D., President

In an item appearing on Physicians' Home, August 1 issue, page 1123, a typographical error gave the dues for an Annual Member as \$100 instead of the correct figure of \$10.

For twelve years Doctor Winslow has served as coroner's physician in Monroe County. That county has two coroners, both physicians, and two medical examiners who perform the autopsies and the scientific investigations for the coroners. The speaker told of his experiences and illustrated some of them with lantern slides.

Oswego County

MEMBERS OF THE medical staff of the Oswego Hospital resigned on July 20 after no action had been taken on their demand for payment for services in welfare cases. The hospital board held that it was a matter between the physicians and the welfare department. It is expected that it will be adjusted. The staff assured the board that the welfare patients would not suffer.

Queens County

THE NEW QUEENS GENERAL HOSPITAL, opened only eight months ago, is already declared to be overcrowded. Dr S S Goldwater, commissioner of hospitals, emphasizes the magnitude of the problem confronting the Queens General Hospital when he points out that a hospital functions best when it is filled to only ninety per cent of capacity. Queens General now is filled to 126.3 per cent of capacity.

Mayor LaGuardia is reported favoring immediate construction of a new 500-bed tuberculosis hospital adjoining the general institution and eventually to be part of a Queens medical center. This project has been approved by the PWA. But the construction of this unit also is years behind the need for it and can hardly be expected to relieve the burden placed upon the Queens General Hospital in the treatment of general cases.

Six other city hospitals also are operating above capacity, indicating that the municipal hospital program is sadly in arrears.

MRS H P MENCKEN, wife of Dr H P Mencken, 35-40 165th street, Flushing, has been appointed historian of the Women's Auxiliary of the Medical Society of New York State. Mrs Mencken organized the Women's Auxiliary of Queens County Medical Society, first auxiliary to be formed in New York State. She also organized an auxiliary in Albany. Mrs Mencken serves on the Public Health committee of the Queens auxiliary.

Schenectady County

"THE SCHENECTADY County Medical Society does not see any reason for abandoning its stand in opposition to the creation of a

County health district at this time," the City Council was informed by letter on July 15.

The letter from the Medical Society stated that at the discussion of the proposed County health district with Dr E E Coughlin of the State Department of Health, in which members of the Council and Board of Supervisors participated, it developed that the kind and amount of public health work done in Schenectady City and County under the present set-up is entirely satisfactory to the State Department of Health "and that the only inducement for creating a county health district at this time is the possibility of receiving an indeterminate amount of state aid."

Continuing, the letter declares, "The Schenectady County Medical Society would not oppose the county health district if its creation would mean better public health work or the supplying of deficiencies in public health work, but it feels that it must oppose the creation of the district when advocated only for the purpose of obtaining a measure of state aid which would eventually lead to extravagance simply because the City and the County's share would not be more than that it is at present. This contention is borne out by experience of other Counties having a County health district where budgets have increased enormously after the establishment of a County health district."

The letter states that delay is desirable also because with the Civil Service list already established, the appointment to the post of County Commissioner of Health would go to some outside resident and because subordinate positions would come under the control of the State Civil Service Commission and the local authorities would lose a certain amount of control over appointments.

Suffolk County

MEETINGS OF THE WIVES of Suffolk County physicians were held on July 8 and 22 to take steps toward the formation of a woman's auxiliary to the County Medical Society.

Sullivan County

DR GEORGE FOSTER HERBEN, President of the Medical Society of the County of Sullivan, has resigned as physician-in-chief of the Loomis Sanatorium at Liberty on account of poor health, and is spending the summer at his camp at Twitchell Lake. His successor is Dr Bernardine T MacMahon, who has been associated with Dr Herben in this work since 1922.

person outside Great Britain ever honored with the Thomas Vicary lectureship of the Royal College of Surgeons. On this foundation next December he will describe surgery of the middle ages.

Dr. Corner has been a student of medical history as a hobby for years. His researches in this field have had important attention, although they have been undertaken as recreation from his regular work in anatomy. In addition to the Royal College lecture he will deliver three lectures at the University of London and another at Guy's Hospital Medical School.

Another Medical School faculty member, Dr. George Packer Barry, professor of Bacteriology, has sailed to attend the second international congress for microbiology at the University of London. At the congress he will present results of some of his recent researches on the transformation of viruses, important in cancer studies.

Nassau County

CONTROL of venereal disease in Nassau County has been undertaken by the County Medical Society and the County Public Health Committee in a dual program "inclusive enough to offer assistance to patients in all walks of life."

"The old ambiguities of the law have been cleared up and there is no longer any confusion as to the responsibility for the treatment of indigent persons suffering from a venereal infection," says a bulletin issued by the Medical Society.

"Either the local health officer or the local welfare officer must, under the law, provide treatment for such persons not able to secure it for themselves."

But the problem of venereal disease, the bulletin points out, is not confined to any one class "and no program for the control of this problem will be adequate or complete if it is limited to any one social group."

The present proposal includes the training of a group of physicians who will come to be recognized as consultants in venereal diseases. Co-operating doctors already have held several meetings to study the control of syphilis and gonorrhea.

Services of this group will be made available to patients unable to pay the usual fees of a private physician.

The services of the group also will be made available to the health and welfare officers of the county, according to the plan, so that clinics will no longer be necessary.

New York County

DR. JOHN D. STEWART, Professor of Surgery at the New York Postgraduate Hospital, returned on the *Rex* on July 16 from a

trip to Europe where he has been visiting his wife, Olga Petrova, at their forty-acre farm at Saint Raphael, in the Riviera. Dr. Stewart spent two months at the Petrova farm, the longest he has ever been there at one time since his famous actress-wife became a farmerette. They have an amicable agreement whereby they visit each other once a year.

Dr. Stewart brought a bag of wines made from grapes on the Petrova farm. Mme. Petrova sells the grapes to a wine maker and he sells the wines back to her. The champagne came to forty-five cents a bottle. The wines were presented to Dr. John Erdman, surgeon who operated on Dr. Stewart for appendicitis prior to his departure for Europe.

DR. CHRISTOPHER J. COLLES, 222 East 82 St. died July 9. Dr. Colles was graduated from Heidelberg in 1882 and was formerly surgeon of the 7th Regiment (107) New York. Dr. Colles' death was caused by chronic interstitial pneumonia, chronic myocarditis, and acute tuberculosis pneumonia.

Oneida County

ACTION OF THE Oneida County Republican Committee in endorsing a Rome undertaker for coroner has been disapproved by the Oneida County Medical Society.

That group, at its monthly meeting at Trenton Falls park, adopted a resolution on July 14 expressing belief the office of coroner should be held by a physician.

Immediately after the action was taken by the society, Dr. Edwin R. Russell, Rome physician, announced his candidacy in the Republican primary. He is a graduate of Cornell University and Cornell Medical School and has practiced his profession for ten years in Rome. He is a member of the Rome Hospital and Rome Infirmary staffs, the Oneida County Medical Society, Kiwanis Club, Elks and Henry P. Smith Post of the American Legion.

Dr. Floyd S. Winslow of Rochester, president of the Medical Society of the State of New York, who spoke on "The Experiences of a Coroner's Physician," supported the county society's resolution and told of the need of a physician in the coroner's office.

Doctor Winslow in his address discussed recent statements of Senator Robert F. Wagner to the effect that, if the Roosevelt administration is returned to office, one of its first moves will be to establish its social security program, including compulsory health insurance for all indigent persons, which would affect directly all physicians. The speaker said medical societies of the country are united in opposition to socialized medicine.

ruling of the Board of Medical Examiners and reinstated the judgment revoking the doctor's license. In so deciding the Court said in its opinion

That the regulation of the practice of medicine comes as legitimately within the powers of the Legislature as does the practice of dentistry, or any other of the professions which require special scientific knowledge on the part of the practitioner, there can be no doubt. It must be conceded that the Legislature has power to regulate the practice of medicine, not only on the ground that it concerns public health, but also on the ground that it is the state's duty to make laws which will afford protection to public morals. There is no profession where the patient passes so completely within the power and control of the operator as does the medical patient. The right to administer anesthetics which produce local or general insensibility to pain, or drugs which may produce total or semiunconsciousness, or otherwise affect the nervous system, should be withheld, not only from all persons who are not highly skilled in the knowledge of and use of said drugs, but also from persons who are not of good moral character. Without doubt the state has the right to require that the possessor of a license to practice medicine and surgery shall be a person of good moral character, reliable, trustworthy, and not given to deception of the public or to the practice of imposing upon credulous or ignorant persons

* * *

While it is true there was a conflict in the evidence presented to the respondent Board at the hearing before it, yet, if the respondent Board believed the testimony of Dr. B, such testimony, under the weight of authority, afforded grounds for the decision by respondent Board that petitioner's advertising was false in fact, that it was intended or had a tendency to deceive the public or impose upon credulous or ignorant persons, and so be harmful or injurious to public morals and safety, because where the Board or tribunal whose decision is sought to be reviewed has acted upon a conflict of evidence, and where it has not acted upon an entire absence of any competent evidence, it has not exceeded its jurisdiction, and a reviewing court cannot, under such circumstances, interfere with or annul the decision rendered by the inferior tribunal, officer or Board.

Treatment of Phagedenic Ulcer

A man forty-four years of age consulted a doctor specializing in eye, ear, nose, and throat work, complaining with respect to his left eye. He told the doctor that, two or three days before, he had gotten some dirt in his eye while working around a car, and that since that time, it had been painful and inflamed. The doctor made a careful examination of the eye and diagnosed a condition of phagedenic ulcer. Using butyn

as an anesthetic, the doctor curetted the ulcer and applied trichloroacetic acid. He instilled two percent atropine, ten percent dionin in the eye, and gave the man a bichloride of mercury salve. He covered the eye with gauze and instructed him as to home treatment which included hot compresses followed by drops and salve which the doctor prescribed.

The following day the patient returned to the office of the doctor and slit lamp examination showed that the condition of the ulcer was satisfactory. The doctor again instilled atropine, dionin, and bichloride of mercury salve, and told the patient to continue the home treatments. The patient was told to return the next day but he did not do so.

It was later learned that the patient, several days after he last saw the doctor, went to another physician and remained under his care for sometime. During that period of time a penetrating corneal ulcer developed. The condition under the care of the second doctor progressively became worse and the patient was advised by that doctor that it would be necessary eventually for the eye to be removed. He was sent to a Government Hospital and approximately two months after the eye was seen by the first physician it was enucleated by a member of the staff of the said hospital.

He subsequently brought a malpractice action against the first doctor in which he made the claim that the treatments were improper, aggravated the condition, and caused the eventual loss of the eye. He made the further charge that the doctor had abandoned the case alleging that, the two days following the time he was last seen by the defendant, he had made various attempts to find him at his office but he was unable to get in touch with the defendant to receive necessary treatment.

The case came on for trial before a judge and jury and the doctor, who had finally operated upon the patient, testified that, in his opinion, the treatment which the defendant gave the plaintiff had been improper and that it had aggravated the plaintiff's condition causing the loss of the eye. The defendant and several eye specialists on the other hand, testified that the defendant had not departed from proper practice in the treatment of the case and that what he had done was not the cause of the loss of the patient's eye. The issues in the case were submitted to the jury and a verdict of no cause of action was returned in favor of the doctor thereby exonerating him of the charge of malpractice which had been made against him.

Medicolegal

LORENZ J. BROSNAN, ESQ
Counsel, Medical Society of the State of New York

Discipline of Advertising Physician

Recently in one of the Pacific Coast States an interesting case came before the Appellate Courts involving disciplinary proceedings which had been taken against a physician upon charges that he had engaged in unprofessional conduct in violation of the Medical Practice Act of that state.*

The statute involved in the proceedings contained a provision declaring among other things that the following constituted unprofessional conduct

All advertising of a medical business which is intended or has a tendency to deceive the public or impose upon credulous or ignorant persons, and so be harmful or injurious to public morals and public safety

A certain Dr F who had been practicing medicine and surgery for thirty-three years, twenty-one years of which had been in the State in question, was charged with a violation of the above section, and cited before the Board of Medical Examiners. The specific accusation made against him was that he had published a pamphlet or booklet in which he had claimed to possess a cure for hernia without resort to surgery. The pamphlet also made statements that it was an established fact that radical surgery for the treatment of hernia results in a relatively large proportion of actual recurrences, or of conditions worse than before the operation. Further, the pamphlet asserted that the open wound necessary in surgery could cause infection even under sterile conditions, whereas his method did not present any risk of infection. The advertisement went on to claim that his method was of injecting a fluid which did not reach the abdominal cavity and which would safely and economically cure hernia without radical surgical operation.

Upon the hearing of the charges three witnesses were called to testify against Dr F. The first was a representative of the Board of Medical Examiners who testified that Dr F had told him that the booklet was prepared by him or under his supervision and was his own advertisement and that the pamphlet had been distributed from his office. The second was a woman

who described having read one of Dr F's advertisements, and as a result having consulted him for treatment with respect to a condition of hernia. She told of having been given literature by Dr F relating to his methods, and of arranging a stipulated fee for weekly treatments. Dr F had told the witness that he could cure any case of hernia without operation, and, according to her testimony, when asked if he guaranteed the work had said, "I can't give you any guarantee, the only guarantee I can give you, when it is cured, if it comes back on you again, I will cure it over again free of charge." She further testified that she was never cured.

The third witness called by the Board was a Dr B who was primarily relied upon to establish the falsity of the claims made in Dr F's booklet. Dr B stated that he had been for a number of years an associate professor of surgery at the medical school of the State University, and that he had personally treated several hundred cases of hernia. He testified that the claims made by Dr F in the advertisement referred to previously were in each and every instance false and untrue.

Dr F testified on his own behalf and made claim to having practiced his profession for many years without previous complaints. He asserted that what he had advertised was based upon his experience and upon statistics obtained from reports from recognized hospitals, and upon information obtained from medical journals. He described his methods and claimed to have obtained excellent results in hundreds of cases. Dr F called as his only witness one patient who was under treatment at the time.

The Board of Medical Examiners found against the doctor, and directed the revocation of his license to practice. The ruling was modified upon an application for certiorari to the Superior Court, and the order was modified so that the discipline was changed to a reprimand for the violation of the Medical Practice Act.

Dr F took an appeal from the order and judgment as so modified, and the Board at the same time appealed from the modification of its ruling.

The Appellate Court found that the Court below had improperly interfered with the

* *Fuller v Board of Medical Examiners*,
59 Pac 2nd—171

advice and assistance under arrangements devised to be just to all concerned, as is right and proper. At this moment a national health survey is being concluded and summarized, to be used as the basis of legislation at Washington. The legislation may be wise or unwise, it may aid the people and the profession, or injure both. The purpose of the survey is to discover how much disabling illness in this country lacks medical care, and the ensuing legislation will no doubt aim to see to it that every sick person has a doctor. A splendid idea, if worked out along the right lines. It is up to the leaders of medicine to see that the lines are right.

How to Do it, is the Dilemma

The temper of the world, in this particular turn and tide of its affairs, is that every man should have his share of the marvelous progress that has enriched our civilization. Why all the profusion of luxury, if the common man is to have none of it? That, in a nutshell, is at the bottom of much of the unrest that we see throughout the world. In the field of medicine the doctors, the men who have in their hands the fruits of our splendid scientific advance, are eager to bring their skill to everyone who needs it. The dispute is only about how it shall be done.

In this dilemma some members of the profession, perhaps worn and harried by the slings and arrows of the outrageous fortune of these times, see at least some kind of refuge in socialized medicine, and declare themselves for it. Others, who see only the seamy side, stand immovable and intransigent against any change whatever.

Between the two is a chasm which must

be bridged if the aim of bringing the doctor to every patient is to be realized. Here is a task for our best minds. It must be remembered, too, that the solution will not be merely for our own time. What is decided now will be fastened on coming generations. If we let the profession become enmeshed and enslaved in some socialistic scheme, then tomorrow's physicians will find themselves hopelessly entangled in it. But if we devise a better plan, if we bridge the chasm with a loftier structure, planned on lines of justice to everyone, then those who come after will find the way prepared to a noble heritage.

This thought is suggested by the address, a few weeks ago, of the President-Elect of the Iowa State Medical Society, Dr. Prince E. Sawyer, of Des Moines. He closed his remarks by quoting a poem called "Bridge Builder," author unnamed. It runs

"An old man, going a long highway,
Came at the evening, cold and grey,
To a chasm vast and deep and wide
The old man crossed in the twilight dim,
The sullen stream had no fear for him,
But he turned when safe on the other side
And built a bridge to span the tide

"'Old Man,' said a fellow-pilgrim near,
'You are wasting your strength with building here,

Your journey will end with the ending day,
You never again will pass this way,
You've crossed this chasm deep and wide,
Why build this bridge at eventide?'

"The builder lifted his old grey head—
'Good friend, in the path I have come,' he said,
There followeth after me today

'A Youth, whose feet must pass this way,
This chasm, that has been naught to me,
To that fair-haired youth may a pitfall be,
He, too, must cross in the twilight dim—
Good friend, I am building this bridge for him''"

Honor the Old Heroes

A SUGGESTION VERY APPROPRIATE to this inspiring piece of verse appeared recently in the *Bulletin* of the Bronx County Medical Society. It was entitled "Let Us Do Them Honor," and proposed that the medical men in each community seek out the old physicians, bowed down by many years of service, who imagine themselves forgotten and give them an evening of felicitation, celebration, and glorification. They are old heroes. They have made the highway and built the bridges over which the young men of today are pressing gallantly forward. It will not be long before these young fellows will be the old fellows, and in a few decades they will be glad they started the custom of

honoring the patriarchs

Nearly every week an item or two appears in the county news telling of a dinner, a surprise party, or a little ceremony or gift at the meeting of the county society to commemorate the achievement of a half-century of practice by some fine old practitioner. But it is possible, and even probable, that more than one community has its "forgotten men" who feel that the world has passed them by. A little dinner, with some speeches about old times and a gift, for remembrance with a presentation address full of kind words, would crown a useful life with the glory that flames in the sunset, and fill the cup of age with the wine of happiness.

Across the Desk

The Medical "Orphans of the Storm"

RECENT YEARS have been times of world wide turmoil, upheaval, and disturbance—not to say hubbub, hurly-burly, bluster, and uproar. Lucky the man who has not suffered in the wild economic and social tempest that is still rampaging through civilization. Among those hard hit has been the doctor, and perhaps this is as good a time as any to see where he stands, and to scan the horizon for black clouds that may bring the threat of worse to come.

The doctor is the man who has seen to it that nobody, however poor, has lacked medical care during these dark years. His whole instinct and bent of mind is to relieve suffering, and he has given his time and skill, by day and by night, to heal the sick. The amazing result is that while the people have suffered in every other respect, the health of the nation is as good as ever. Health has known no slump. This outstanding feature of the Great Depression should never be forgotten.

But what has been the doctor's reward for it? He has seen billions of dollars flow in a golden river for movies, automobiles, chewing gum, cocktails, cigarettes, rouge, lipsticks, sweepstakes, policy tickets, wood-pulp thrillers, worthless patent-medicine nostrums, and quack "healers" of all kinds, while his income has shrunk to fifty, forty, thirty, and even ten per cent of its former figure. Physicians in industrial towns have seen their entire clientele thrown out of work, so that their "charity list" swells to embrace one hundred per cent of their practice. All physicians have found their "white-collar" workers and middle-class patients unable to meet their bills in full. Many a medical man has found himself in the position classically described as "between hell and the iron-works."

Something Saved from the Wreckage

But something has been saved out of the wreckage—something worth while, too. When the government, state, and local agencies began to care for the destitute, it became clear at once that it was a rank injustice to expect the doctors to provide medical care free, while the butcher, the baker, the coal man, and everyone else were getting cash. So all around the country the relief authorities are now higgling and

haggling with the doctors, trying to beat them down to the lowest starvation terms they can, but, when all is said and done, they are fixing a fee basis for the care of the indigent. That is certainly something, for it foreshadows the time when the doctor's "charity list" will be on a definite fee basis, paid out of public funds, a proper and logical arrangement that should have been made years ago.

True, the fees sometimes do not cover the doctor's outlay, and the authorities sometimes take the doctor's patients and send them to other physicians in an absurd effort to "pass them around," like prize packages at a picnic, but it is true, too, that certain smart medicos, who would make millions in business, have gathered relief patients by the hundred and collected fees by the thousands. These things are being ironed out by the county societies, and must not blind our eyes to the main fact that if the situation is handled with wisdom and firmness, we may soon see the end of the old custom of giving free medical care to families who pay cash for everything else from meat to movies.

To Bring Medical Care to All the People

A much larger change is also going on which will profoundly affect the medical profession. This, too, if handled rightly, may be of enormous benefit both to the profession and to the public. It is the urge, by the folks who have been called the "socializers," to bring medical care to the whole people. They have gone at it in the wrong way, they have tried to regiment the doctors into a scheme where they would be sent here and there and bossed about by political appointees, and they have thus far failed signally, both at Washington and at all the state capitals.

But what about their main purpose—their idea that every sick person should have medical attention? What is the matter with that? It is what every doctor thinks. Their aim is all right, but their method all wrong. Then why not seize the idea, and carry it out in a way that will serve the people and the profession at the same time?

The Social Security Act, which is now law, contains provisions for the aid of the blind and the crippled, and in various states the medical profession is being called in for

milk

AS AN AID TO MAINTAINING THE ACID-ALKALINE BALANCE OF THE SYSTEM



Proteins, fats and sugars are constantly forming acids as an end product of their metabolism. If a diet, over a period of time, is deficient in alkaline-ash materials, and so insufficient to neutralize the total acidity of metabolism, a lowering of the alkaline reserve occurs (acidosis).

To maintain the proper balance of the system, the mineral alkalis must be depended upon for acid neutralization. Perhaps the most important of these alkaline-ash elements are Sodium, Potassium and Calcium. The normal diet should include an adequate amount of foods containing these minerals for proper nutrition.

Milk, green vegetables and fruits are the three most important alkaline-ash foods. It is usually easier to obtain increased ingestion of milk than of other foods. Thus a sufficient ingestion of alkaline-ash producing salts is readily insured with milk — *The Bureau of Milk Publicity, Albany.*



THE STATE OF NEW YORK

Books

Books for review should be sent directly to the Book Review Department at 1313 Bedford Avenue Brooklyn, N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

A Terminology of Operations of the University of Chicago Clinics By Hilger P Jenkins, M D Duodecimo of 99 pages Chicago, University of Chicago Press, 1935 Paper, \$1 00

This small book of ninety-nine pages has been written to aid in the better filing of surgical histories and should be of assistance to the surgical staff and to the record librarian of every well regulated hospital. Realizing the difficulties which are experienced in the filing of records, the author has given, in a simple manner, the results of his thought on the more workable method which he has established for the filing of records at the University of Chicago clinics. Thus, he has systematized the names of surgical operations. All synonymous terms are grouped together.

The first section of the book comprises a list of stems of anatomically derived terms, the second, a list of organs and structures of the body, listed alphabetically, and the third, a general alphabetic index.

The book should be a great help to the surgical staff delegated to the work of indexing and filing the records and to the librarian in arranging these for easy accessibility. It is needless to point out the advantages of a workable filing system for the better presentation of statistics throughout the country and for its usefulness in the preparation of papers and otherwise.

EMIL GOETSCH

The Stomach and Duodenum By George B Eusterman, M D, & Donald C Balfour, M D Octavo of 958 pages, illustrated Philadelphia, W B Saunders Company, 1935 Cloth, \$10 00

This is not just another text book. It is a coordinated effort on the part of the Mayo Staff to present a composite picture of the present status of diseases of the stomach and duodenum, a volume which presents to those interested in abdominal diagnosis and treatment the best thought of the day. The new conception of the etiology of ulcer based on the Mann experiments is courageously set forth in face of the ever present controversy on that subject. A chapter on applied physiology by Alvarez and one on the roentgenoscopic recognition of gastro-duodenal pathology by Kirklin, alone are worth the price of the book. The newer knowledge accumulated in the past decade from the best sources, on subjects such as malignant tumors of the stomach, gastritis and achlorhydria, is interestingly presented with a force of style and expression which is a welcome relief from the elementary discussion usually en-

countered in the average medical text book.

Quotations and references are for the most part from the work published by the best authorities in the past five years.

The chapter on the consideration of pylorospasm and gastrospasm and their causes and treatment is especially welcome and will dispel much of the confusion of thought on these subjects. The exact description of surgical procedures, including the indications for the various operative methods of dealing with peptic ulcers, choice of anesthesia and post operative treatment, makes this an authoritative work which every internist and surgeon will covet for the assistance it will afford in solving the many problems incidental to gastric and duodenal disease.

HENRY F KRAMER

The Compleat Pediatrician. Practical, Diagnostic, Therapeutic and Preventive Pediatrics By W C Davison, M D Octavo Durham, Duke University Press, 1934 Cloth, \$3 75

One must agree with the general praise accorded Doctor Davison's amazing reference book of pediatrics entitled, "Compleat Pediatrician" for it has under one cover, gems of treatment and dietary which are unusually difficult to find. Because of this very completeness and compactness the print is sometimes rather difficult. This is especially true of the diet lists which have complete and time saving calculations.

There are some who will not make the effort required to use the section on differential diagnosis and will forget that this book does not purpose to give detailed accounts of children's diseases. In our opinion, there is sufficient substance in this volume to reward one for learning to use it as he would an excellent text-book of anatomy or physiology. It is decidedly not a book for superficial or casual use.

C A WEYMULLER

A B C of the Endocrines. By Jennie Gregory, M S Quarto of 126 pages, illustrated Baltimore, Williams & Wilkins Company, 1935 Cloth, \$3 00

This is a rather clever attempt to impart the salient points of endocrine physiology and pathology to the non-medical public by means of pictures and charts. In spite of the ingenious method applied, the intricacies of the subject make us doubt whether it is possible at all to cope with this task. The "ABC" will hardly benefit physicians, and the unavoidable simplifications of the complex matter may even mislead some of the less well informed.

M A GOLDZIEHER

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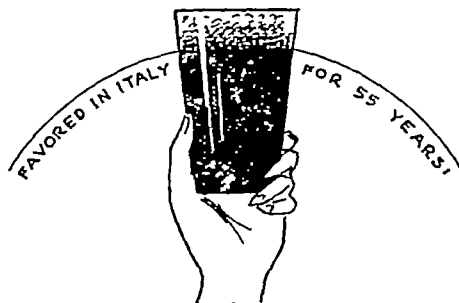
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An invitation is extended to the medical profession of New York State, to accompany the American Academy of Ophthalmology and Otolaryngology on a post convention cruise to Bermuda aboard the palatial "Monarch of Bermuda", October 3rd to October 9th

A pleasant and interesting time is assured. The Trade Development Board of Bermuda, as hosts during the two day stopover, are arranging many special events including a tour of the island, and a golf tournament in which golf enthusiasts may compete for the Bermuda cup presented by the Board

As accommodations obviously must be limited, it is suggested that those interested write for information to Dr W P Wherry, Executive Secretary-Treasurer of the American Academy of Ophthalmology and Otolaryngology, 1500 Medical Arts Building, Omaha, Nebraska, or to the travel department of the NEW YORK STATE JOURNAL OF MEDICINE

* * *

Atlantic City Trumps Successful Season with a Great Finale

Athletes that protect millions of bathers on beaches in all sections of the country will be here to compete in the National Lifeguard Championships, August 26

Teams are expected from Miami, Daytona Beach, Virginia Beach, Jones Beach, Ocean City, Chicago, Asbury Park, Coney Island, Cape May, Rockaway Beach Wildwood, Manhattan, and other resorts

They will take part in a series of rowing, swimming, and rescue races. There will be trophies for the individual winners and also a number of team prizes. The events will get under way here at two o'clock.

Miss Jewel Lindsay, 18-year-old Atlantic City High School graduate, has been selected as "Miss Atlantic City". She will act as hostess to the sixty visiting beauties here to compete for the crown of "Miss America, 1936", during the Showman's Variety Jubilee September 8-14. Word is being received here almost daily on winners that have been selected in beauty and talent contests in various parts of the country



Meanwhile plans are going ahead to make this year's Jubilee even more elaborate than the old Atlantic City Pageant, for which it was inaugurated as a successor last year. More than one hundred floats have already been entered in the parade which will be held on September 11.

Cameras are still clicking in the Atlantic City \$100 camera contest. The contest is open to all amateurs except year round residents of

Atlantic County. Prizes will be awarded for the best pictures taken of Atlantic City's Beach scenes, boardwalk scenes, landscapes, and architecture.

Greater attractions than ever before are being offered by the numerous theatres, piers, and supper clubs, along the beachfront and in other parts of the city, while hotels and hotel grilles are putting on shows with nationally known radio bands and stars of stage and screen.

Sailing yachts, speedboats motor launches, canoes, and other craft are leisurely waiting at the Inlet for the passengers desiring a cruise on the ocean or bay or a day's fishing in nearby waters.

Excellent surf fishing may be enjoyed at a number of points along the strand. While for those wishing to go a little more to sea, Tuna, and bluefish are abundant.

Sun decks on the hotels and piers are proving exceptionally popular, and visitors who come to the shore are deriving comfort and relaxation from them.

* * *

European Short Tours Extended

Continued heavy demand by travelers for moderate priced trips to Europe, and the success which marked the initial short tour to England and the continent recently made by the Red Star Liner Pennland, has resulted in three more such voyages being added to the Red Star Line's schedule for this summer and fall. The trips will be made by the Westernland and the Pennland from New York, September 5th and 19th and October 3rd, according to John J Dwyer, passenger traffic manager of the Red Star Line. The Westernland will make the first and third cruise, while the Pennland will carry those making the second

(Continued on Page xxvii)

THERE IS

no hay fever

IN BERMUDA

Hay fever causals (see report quoted below) simply do not exist in Bermuda. Nor can they go there, thanks to Bermuda's unique air-conditioning apparatus.

This apparatus consists of salt water and a system of prevailing breezes. All air bound for Bermuda must cross a 600-mile stretch of briny deep. En route, even the most persistent ragweed pollen—as well as soot and cinders and taxi-cab honks—must weary and fall, despairing, into the waiting waves. Thus the breeze continues on toward Bermuda in a state of constantly increasing cleanliness.

You, meanwhile, are sunning your complexion on these famous pink beaches. Or perhaps you are splashing in multi-coloured surf, playing golf, tennis, watching the yacht races—anything, in fact, but sneezing!

Bermuda's freedom from hay fever has long been known to visitors. It received official confirmation when Professor Frederick H. Hodgson, in August of 1935, spent several weeks there, under the auspices of the New York State Journal of Medicine, to secure an expert, unprejudiced opinion on the occurrence or absence of hay-fever causals in Bermuda.

"the Colony," stated Professor Hodgson's official report, "passed a hundred per cent as a sanctuary for hay-fever sufferers."

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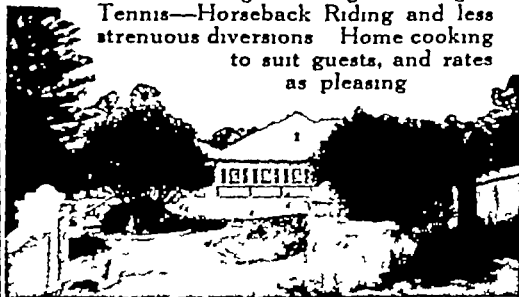
(Continued on Page xxvii)

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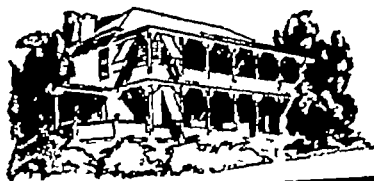
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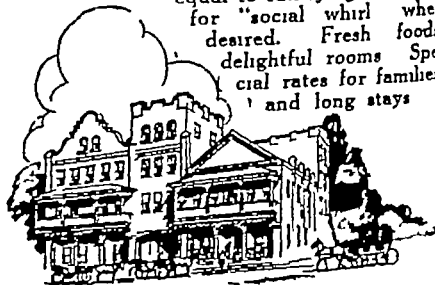
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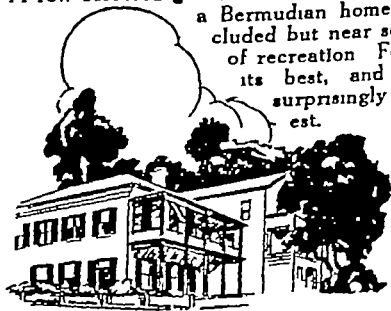
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London will again be visited, and from there the party will entrain for Southampton to meet either the Pennland or the Westernland for the journey home. The tours will be on an all expense basis \$325 00 for those going to the continent and \$295 00 for the all English trip. As the Pennland and Westernland are tourist ships exclusively the passenger will have access to the entire steamer at all times

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Other events include the women's pair for the Wilbur C. Whitehead trophy, the Monmouth County Championship for the Berkeley Carteret prize, the newspapermen's pair for a group of special prizes and the president's game for a plaque offered by Huber Boscowitz

(Continued on page xxx)

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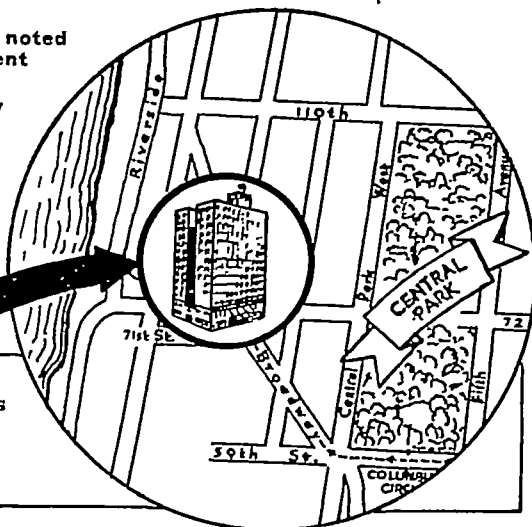
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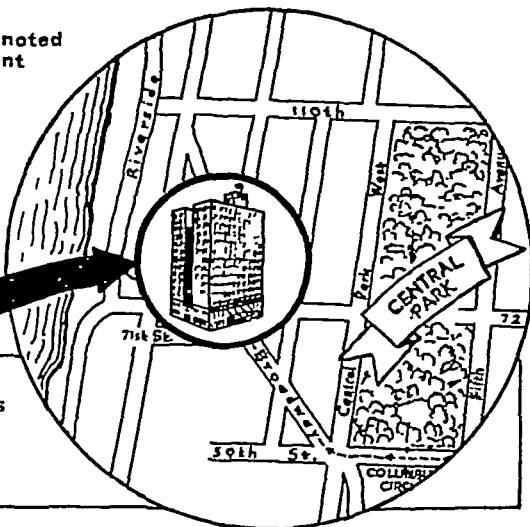
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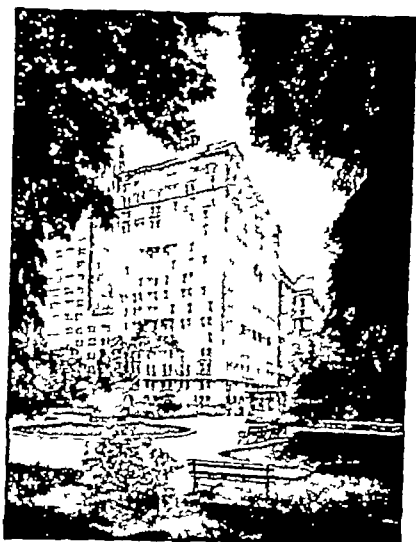
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The present championship matches will mark the seventh season that the event has been here in Asbury Park. It was inaugurated in 1930 when the famous team of Mr & Mrs. Ely Culbertson, Baron Waldemar von Zedtwitz and T A Lightner walked off with the honors.

Among the outstanding masters scheduled to take part in the play are P Hal Sims, Howard Schenken, Commander Winfield Liggett, Harold A. Vanderbilt, Oswald Jacoby, David Brumsteine, R. L. Frey, B J Beckers and others.

With most of the visitors and members of the summer colony concentrating on sports, attention is being focused on the polo matches held almost daily on nearby fields.

Swimming and sun bathing as well as deep sea fishing is attracting additional thousands to the surf this season.

* * *

Ten Day Mail Exchange Established With Buenos Aires

The inauguration of the United States Post Office's new Foreign Air Mail schedule for Pan American Grace Airways bringing Buenos Aires within 4½ days of New York via South America's west coast, makes possible a ten-day

(Continued on Page xxxiii)

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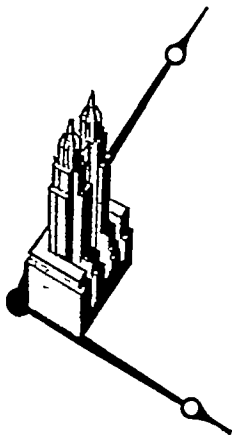
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THE WHITE MOUNTAINS with hiking mountain climbing scenic roads to world famous views, healthful mountain air, no hay fever. A SPORTS PROGRAM including sporty golf course, swimming, tennis, fishing saddle horses. A SOCIAL PROGRAM offering bridge, afternoon tea, concerts, dancing. A HOTEL high up a hill, away from main roads, set in a 200-acre birch-and-pine tract; excellent service, distinctive cuisine modern conveniences, homelike atmosphere. Booklet. *New Management*



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A survey of the Adirondack region by the State Health Department revealed that the immediate vicinity of Big Moose Lake is about the only section of New York State entirely free of ragweed. To keep Higby's so, a sample in a cellophane bag constantly reminds employees to report and destroy any signs of this objectionable vegetation.

In addition to its natural endowments, Higby's is unique in its facilities to provide the ideal vacation. It is not the typical Summer Hotel or vacation resort, but rather a private Club where select patrons of refined tastes may find relaxation and recreation in a friendly atmosphere of pristine beauty—at rates far more reasonable than you will find at any other place of equal quality and exclusiveness.

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and old, also help make it the preferred seashore hostelry As convenient to all
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AT THE FLANDERS ATLANTIC CITY

exchange of business and other correspondence between the United States and Argentina. The republics between benefit in proportion, Colombia and Ecuador being served in 2 days, Peru and Bolivia in 3 days and Chile in 4 days from New York.

Northbound mail leaves Buenos Aires on Saturdays for delivery in New York at noon on the following Thursdays and on Wednesdays for similar delivery on the following Mondays. Mail southbound leaves New York on Monday and Friday nights so that mail received in New York from the Argentine and points between on Mondays and Thursdays can be answered and dispatched, and correspondence achieved with the lapse of only 10 days. In the same way merchandise ordered by these mails can be dispatched south by air-express, on the same schedule.

Buenos Aires is 7404 5 miles from New York by Pan American Grace Airways route via South America's west coast

* * *

"Motor to Canada" Booklet for Late Summer and Fall Travel

Phenomenal increases in motor touring to eastern Canada have necessitated an additional distribution of the illustrated booklet "Motor to (Continued on Page xxxv)



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Catering especially to physicians and the needs of their patients

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Sea Water Swimming Pool
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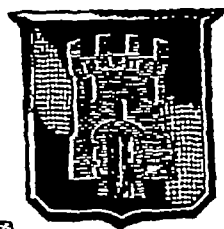
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Weekly, Monthly or Yearly Rates

Single Rooms \$2.50 per day

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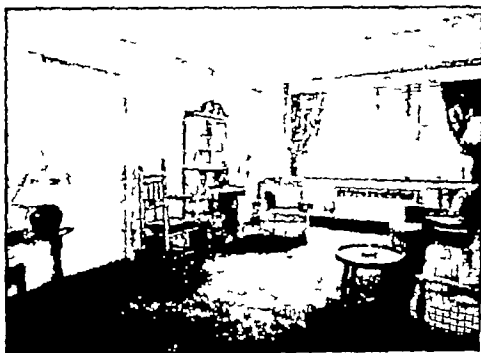
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Special rates per week, month, season

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Canada," copies of which are available without cost at automobile club and chamber of commerce travel departments. The booklet, covering provinces of Ontario, Quebec, New Brunswick and Nova Scotia, has the distinction of being the only motoring publication universally accepted for distribution by every one of the thousand motor clubs in the United States, regardless of their national affiliations.

Information in the brochure includes hunting and fishing, bungalow camps, customs and immigrations regulations, hotel data and historic references. It is a Canadian Pacific Railway publication.

* * *

Fish and Drink Across the Sea

Have you ever caught a "Dollaghan," a "Gillaroo," or a "Sonaghan?"

Probably not, but if you are that keen an angler, that water anywhere tempts you—then some day when you visit Ulster, this privilege will be yours. The terms peculiar to Northern Ireland, signify certain species of fighting trout to be had on Lough Neagh and Lough Melvin.

Ulster angling is becoming better known every year, and the sport of salmon and trout fishing was never in a better organized state. All the requisite information in well tabulated form may be obtained from the Ulster Tourist Development Association (or by inquiry at the British Empire Building, Rockefeller Center, N. Y.)

Now to drink!

The chief drink served at a recent commemorative dinner in the Tower of London was "bragget." It had been brewed specially for the occasion by the Senior Beadle of Barnstaple.

The basis of bragget is strong ale and honey. It is one of the oldest drinks known in Britain. According to legend it was the favorite beverage of Gog and Magog, the giants whose effigies adorn the west gallery of London's Guildhall. There was a time when it was drunk in all parts of the country and "beefeaters" regarded it as an excellent specific against the cold and damp of their quarters in the Tower.

The only man who still brews it as part of his normal duties is the Senior Beadle of Barnstaple, and it is drunk at the annual Charter Fair in his home town.

* * *

Travel Brevities

INCLUDED among members of the Grace Line's 32-day Peru Cruise were Dr. and Mrs. E. F. Carpenter of Pennsylvania.

AMONG passengers sailing on the "*Queen Mary*" recently, we find Dr George Hills Iler, aboard the *Laconia*, Dr and Mrs T P Murdoch, and headed for Nassau and Havana aboard the *Franconia*, Dr Myron Keller and Dr H J Stewart

AT ATLANTIC CITY, guests of the Ambassador Hotel included, Dr and Mrs S W Long of Tennessee, Dr and Mrs A G Babbitt of Pennsylvania, Dr and Mrs R D Anderson of New Jersey, Dr and Mrs G Haines of New York, and Dr and Mrs Louis A Milkman of Pennsylvania

PASSENGERS sailing on the Cunard White Star *Georgic* included Dr C W Garrick and Dr W R. Gregg, and arriving on the same ship, Dr and Mrs H D Dakin, and Dr J W Levering, prominent Philadelphia surgeon

GUESTS at the Castle Harbour Hotel in Bermuda included Dr George Frieman, Dr and Mrs T Friedman, and Dr and Mrs J McAuley, all of New York, Dr and Mrs Milton Sherry of Maryland, Dr and Mrs Taylor of Pennsylvania, Dr and Mrs Iasen of New York, Dr and Mrs J R Boutin of Canada, and Dr Richard Lewisohn of New York.

SAILING FOR BERMUDA aboard Furness Bermuda boats were Dr and Mrs W G Phippen of Massachusetts, and Dr and Mrs Wm. W Howell of Boston

AT THE TRAYMORE in Atlantic City the following were registered recently Dr and Mrs J B Potsdamer, Dr and Mrs A P Murray, Dr and Mrs Anshutz, and Dr and Mrs J R Heller, all of Pennsylvania, Dr and Mrs Kirsch of Missouri, Dr and Mrs D W Page of New York, Dr and Mrs M L Hockenbery of Maine, and Dr W R. White of Maryland.

OUTWARD BOUND—on a triangular cruise of the *Franconia* to Canada and Bermuda were
(Continued on page xxxvi)



Most Medical Men

—prefer the Lenox because it is so convenient to the hospitals and medical centers. They also like its homelike atmosphere, large comfortable rooms, good food and fine service.

Note these Rates—Why Pay More?

Single \$1.50 to \$3.00

Double \$2.50 to \$5.00

Family Suites \$5.00 up

Write for free A.A.A. road map, also our folder with map of downtown Buffalo

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140 North St. near Delaware
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sell!
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employ—or secure work!



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The **BROWN SWAN**
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Delightful, cool Mountain
Air in the Adirondacks

Beautiful scenery. . . all outdoor sports and a refined clientele.

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(Continued from page xxxv)

Dr Marshall Bardwell, Dr and Mrs Harold Brandleone, Dr and Mrs J A Chartard, Dr W H Foulkes, and Dr and Mrs Theodore Heineken

MEMBERS of the Grace Line's 32-day all expense cruise party to Peru included Dr W Robert Perkins and W Robert Perkins, Jr, of Washington, D C

HONEYMOONERS on a cruise of the Grace Line, Dr and Mrs A Wray Barkley of Pennsylvania left for a stay at Panama

AT THE ST GEORGE in Bermuda, included among guests recently was Dr Thos F Bridgeman of New York

SAILING on the *Santa Rita*, Dr and Mrs S Fineman of New York were listed as members of the Grace Line's 32-day Peru cruise. Returning from a 39-day cruise were Dr and Mrs Nathan Allyn of Massachusetts. Other arrivals on the *Santa Rosa* were Dr and Mrs John C Kibler of Pennsylvania, Dr and Mrs A J Williams of San Francisco, and Dr Antonio Longoria of Ohio

DR AND MRS A J BEDELL of Albany arrived on the *Aquitania* from an extended tour of Europe. Those sailing on the same steamer included Dr and Mrs Robert L Barnes, and Dr William G Morgan, medical authority and

dean of the Georgetown University Medical School

OTHERS SAILING on the *Georgic* included Dr and Mrs Arthur L Day, Dr and Mrs R E Bristelle, and Dr and Mrs C. L. R. MacCollum

THE CUTTLE-FISH, or small octopus, found under the more remote Bermuda reefs, can easily be rendered harmless and defenseless. Local fishermen say that if an arm is plunged into the pouch of the creature it is mere child's play to turn the "scuttle" inside out. Visitors, however, are pleased to learn that cuttle-fish have never been known to come near the bathing beaches

SHARK is not exactly looked upon as an appetizing dish elsewhere but the Bermudians have a way of their own of preparing it that makes it look precisely like hashed chicken and taste delicious

It is boiled, squeezed and hashed with bird peppers, thyme and seasoning. The liver of the shark is used for the grease in which it is prepared. There is a saying amongst local fishermen "that the liver is largest when the moon is full"

Considered a plebian dish, many a Bermudian autocrat will dine off shark—providing it is cooked in someone else's house.

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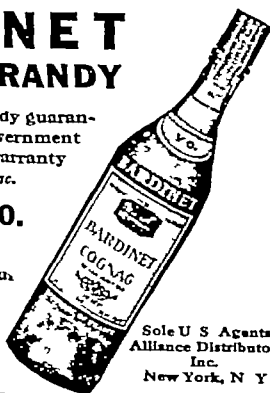
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NEW YORK TATE JOURNAL OF MEDICINE

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SEPTEMBER 1, 1936

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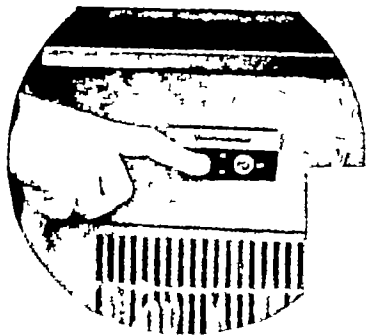
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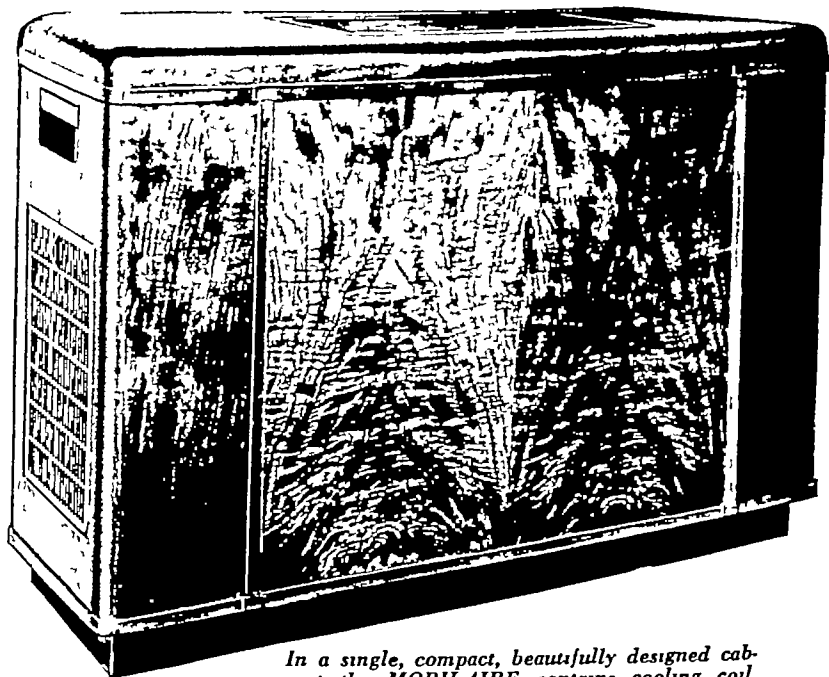
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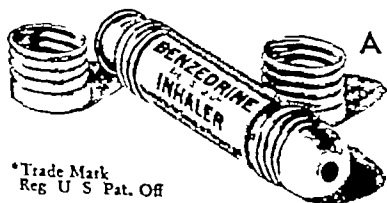
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For the adult members of the family, Benzedrine Inhaler is as useful as it is for your young patients. Secondary reactions 'are so infrequent and so mild as to be virtually negligible' (Scarano, *Med Record*, Dec. 5, 1934), and even in very young children over-stimulation and other undesirable reactions do not occur with the proper dosage.

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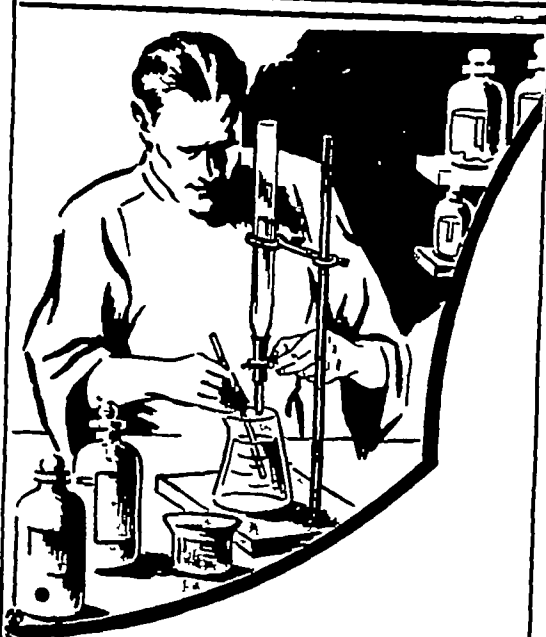


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carbinamine 325 gm. oil of laven-
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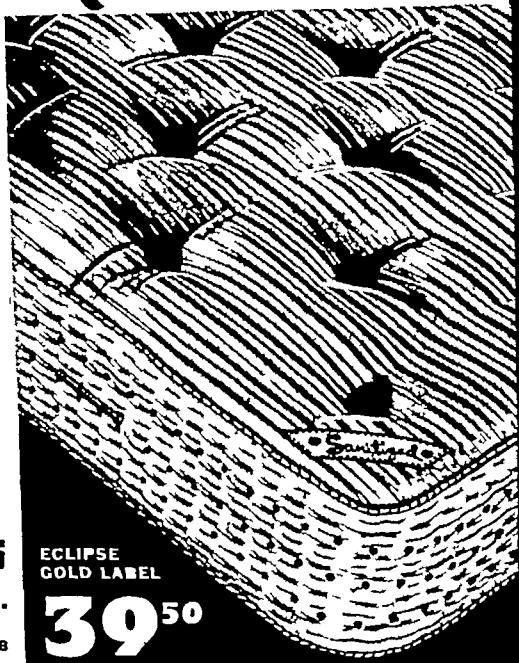
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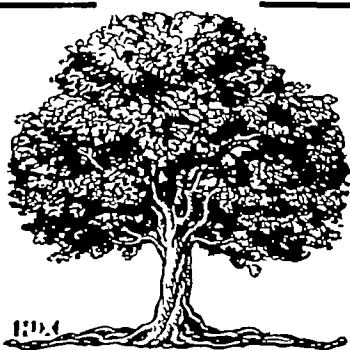
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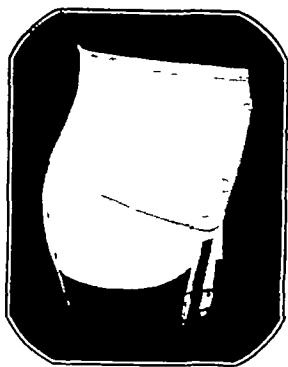
Future generations may discard this silly custom, just as our women have emancipated themselves from the overstuffed fashions considered the moral thing by our stern forebears. Traditionists defend inherited beliefs and customs, and in the past ridiculed every effort, every new idea to change the way of life.

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Infant Feeding and Nutrition
William Heinemann, Ltd., London
1923, pp 11, 79

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W H McCaslan. Summer diar
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If there is an improvement in the time of absorption of carbohydrates may be added to the teaching of the originator of the carbohydrate added should be most easily assimilated. Dextrin maltose is there for the carbohydrate of choice. —Summer diarrhoea in the young. International Journal of Pediatrics 9:111-118.

ditions admit, some sugar other than milk sugar or cane sugar being used preferably dextrin and maltose. —H E. Small Diarrhoea in bottle fed infants J Maine M A 12 164-168 Jan. 1922

The condition in which dextrin malabsorption is particularly common in acute attacks of vomiting, diarrhea and fever. It seems that recovery is more rapid and recurrence less likely to take place if dextrin malabsorption is substituted for milk sugar or cane sugar when these have been used, and the subsequent gain in weight is more rapid.

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Present tendencies in infant feeding Indianapolis M J July 1914

of lactose may cause diarrhoea. If a high percentage of sugar be required it is better to replace it by dextrin maltose, such as Mead's Nos. 1 and 2, where the maltose is only slightly in excess of the dextrins, thus diminishing the possibility of excessive fermentation. — *W. J. Pearson, Common practices in infant feeding. Post-Graduate Med J 6 38 1930 abstr. Brit. J Child Dis 25 168-165 April June, 1931*

evaporated milk formula which will supply about one and one half to two ounces of whole milk to every pound of body weight is reached. This also should finally have the addition of dextrin maltose amounting to five to seven per cent.—R. A. Strong Summer diarrheas in infancy and early childhood. *Arch Pediatr* 12: 811

that group of organisms thrive on) and high in protein. Calcium caseinate milk accomplishes this purpose. In our series of cases, we found it was necessary to use the casein calcium for from 5-8 days when it stopped it and added dextrin maltose to the formula. — A. G. DeSanctis and L. V. Posner. The value of calcium caseinate milk in fermentative diarrhea. Arch. Pediatr. 35 235-236. April, 1918.

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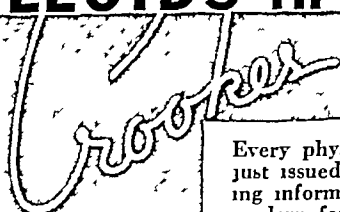
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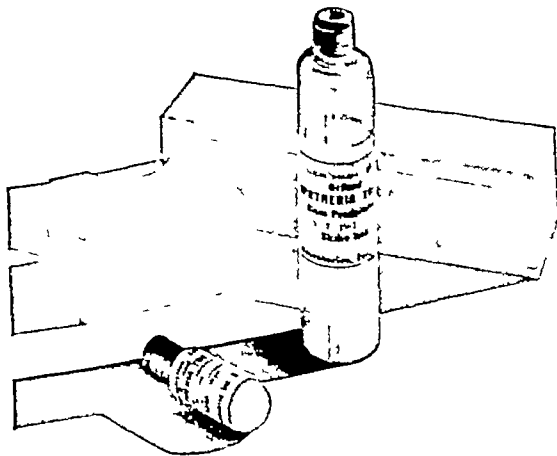
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III VITAMIN A

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That vitamin A exerts an influence on the growth of human infants and children is also generally accepted.

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tene content, since vitamin A as such has never been found in plant tissue. Ingested carotene is believed to be converted into vitamin A by enzyme action in the liver of the animal (4), in which organ the vitamin is stored.

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(1) 1927 J. Exp. Med. 44 699

(2) 1935 J. Nutrition, 9 735

(3) 1929 Biochem. J., 23 803

(4) 1931 J. Biol. Chem. 94 185

(5) a. 1933 J. Am. Diet. Assoc., 9 295

b. 1931 J. Nutrition 4 267

c. 1935 Am J Pub Health 25 1340

(6) a. 1925 Ind. Eng. Chem., 17 69

b. 1926 Ind. Eng. Chem., 18 85

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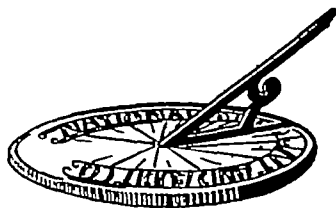
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THE TEACHING OF FORENSIC MEDICINE

HARRISON S. MARTLAND, MD Newark, N J

Chief Medical Examiner of Essex County (Newark), N J, and Professor of Forensic Medicine, N Y University College of Medicine

Of all the branches of medical science, forensic medicine has been most neglected. Yet it is of vital practical importance in the proper administration of justice, in the proper detection of crime. It prevents the waste of human life in accident and industry. When bungled it causes injustice, and often undue sorrow and suffering.

The late Dr. Norris¹ once said

A coroner's physician, in most of our cities, is required to handle a complicated case, due to his inexperience and lack of ability, the proper medical inquiry is not performed. He and the entire medical profession must bear the obloquy. Grave injustice to the relatives of the deceased, financial loss and moral defamation must be endured. Justice is disgraced and defeated and innocent people bear the brunt in consequence of a system which fosters ignorance, prejudice, and graft.

With the exception of a few isolated instances, no provision is made in the medical schools for the teaching of forensic medicine—unless we were to so dignify one or more lectures on medical ethics and jurisprudence. Graduate work to train medical men for a career in forensic medicine is practically unknown and there is no incentive, for if they were trained there is no assurance that the politician would appoint such men in preference to mediocre politically minded doctors.

There are no medicolegal institutes in this country and no journals devoted to medicolegal medicine worthy of recognition.

The apathetic attitude of the public towards the advancement of medicolegal

medicine is due mainly to ignorance. The uninterested attitude of the medical profession is due in large measure to their impression that men performing the medicolegal autopsy are to be regarded as politicians enmeshed in a political system.

This lack of interest by the medical profession in forensic medicine is the chief reason why continental training of pathology greatly excels that obtainable in this country although the time has long passed when physicians must go abroad for training in most other branches of the medical sciences.

Forensic Medicine

In the United States, forensic medicine, medical jurisprudence, and the scientific detection of crime are at the lowest possible ebb of efficiency. To substantiate the truth of this statement one has only to follow the daily press accounts of examinations and inquests made by coroners and the findings of the "autopsical surgeon."

The most excellent work of the Department of Justice is the only redeeming feature of the system of criminal investigation in this country although the incarceration or execution of a few "Public Enemies No. 1" makes no impression as crime marches on. However, the work of this national agency shows clearly what can be, should be, and must be done.

Necessity for a United Front

Miller² states

There is professional leadership in the health campaign, but not in the campaign against crime. Everybody is against disease,

*Read at the Annual Meeting of the Medical Society of the State of New York
New York City, April 28, 1936*

but not everybody is united against crime. There is no identity of feeling or thought among the various anti-crime organizations. We need professionally trained people to do the exploration and prevention and we need some realistic thinking on the subject.

Hoover³ says

Each year sees 12,000 murders, 46,981 cases of felonious assault, 283,685 burglaries, 779,956 larcenies, and 247,346 automobile thefts.

It is a national disgrace that the average murderer serves only four years.

Throughout our country, law enforcement has been hampered, hamstrung, and strangled by the blood-caked hands of crime-affiliated politicians. In every large American city, there is attorney after attorney who makes his living by counseling men he knows to be guilty often he plans with them.

In addition to such crimes as stated above we must add the enormous loss of life due to accidents. Much of this loss is due to criminal carelessness. The members of the great American public speed home to get a quick supper of canned goods, to rush to a moron movie, to hear a damnable crooner or political noise maker on the radio, or to speed on our superhighways bent on spending all their savings on a cheap week-end.

In 1935 the automobile killed 36,400 people, permanently injured 107,000, and temporarily disabled 1,170,000.

In addition 31,500 died as a result of accidents in their homes, forty-four per cent of which were due to falls, 17,500 lost their lives in other public accidents, falls, drowning, burns, etc. Yet only 13,600 lost their lives in industrial accidents. This difference clearly shows the good results of education in the prevention of occupational injuries.

Further, another source of crime or criminal negligence is the functioning of the Workmen's Compensation Act—the "Compensation Racket." We only need mention here silicosis—the latest of God's gifts to chiseling lawyers, compensation boys, and racketeers. Last year there were cases pending in this country in which the sum of the damage asked greatly exceeded \$50,000,000. Such cases are usually taken by the lawyer on a "50-50" basis—the cost of the experts to be paid by the plaintiff. The results are often deplorable. If a poor workman or his family deserve compensation, they receive almost nothing when the case is settled.

Often if he does not deserve compensation he may get gravy, for the case may be settled out of court. During 1932, one lawyer is said to have received \$100,000 in fees from supposed silicosis cases, few of which he was required to try in the court room.

Coroner's Office in the United States

Almost universal use of the coroner's office in the United States—chief cause of this disgraceful condition. The coroner's office in the United States is mainly responsible for this disgraceful low standard of medicolegal jurisprudence. It was adopted from the English coroner's system which has been in practice for hundreds of years. According to Schultz,⁴ some modern incumbents delight to believe that it was established at the time of Alfred the Great. It is certain that it existed in 1194. Moley,⁵ states that "the coroner's office is a product of medieval conditions and has changed very slightly in functions during the centuries in which it has existed in England and America."

Herzog⁶ in defining the present coroner's office, states that

When a dead body is found, or when a person dies under suspicious circumstances or suddenly, or without having had a physician in attendance during his illness, or having had a physician only a few minutes before death occurred, in a well-regulated community, some one in authority must take charge of the body and must, or at least should, determine whether the person died from so-called natural causes—that is, from disease—or by murder, suicide or accident. If death was from disease, the person in authority would determine the nature of the disease and whether perhaps some industrial poison was a contributing or exciting cause, if by murder, how the murder was committed, whether by means of pistol or rifle, hatchet or dagger, strangulation or poison, if by accident, what the cause of the accident was. Throughout most of the States of the Union the coroner is the judicial officer whose duty it is to investigate such deaths. Some thirty-five states have this old coroner's system without substantial change, save in a few of them the inquest has been abolished. In four other states the justice of the peace performs the function of the coroner. In three other states the investigating official performs the coroner's duties, acting on the order of the court or of the prosecuting attorney. In four or five states only is a medical officer

put in charge of the investigation of the physical cause of such a death and a legal officer in charge of the rest of the inquiry.

The inquest Again in defining the coroner's inquest, Herzog,⁶ states that

For the purpose of investigation the coroner holds an inquest over the body, summons witnesses, and impanels a jury which should view the body, listen to the evidence, investigate and determine the cause of death and decide whether the persons died from natural causes or not. The jury may even find that the person came to his death at the hands of a certain person whom the coroner is empowered to apprehend and commit to prison. The coroner's jury is selected by the coroners and no one has any right to challenge a juror. Thus it has happened that in cases in which a woman died from abortion or a man from a bullet wound which entered his back that a packed jury would find the woman died from pneumonia and that the man committed suicide.

I need but quote what a few authorities have thought of this farcical jury of inquisition

Moley,⁷ states

The inquest is, as a general rule, without value in determining the cause and circumstances attending death. Moreover, as it is now conducted it does not possess the first requirements of a judicial proceeding. Verdicts as determined by coroner's inquests are generally wholly inadequate descriptions of the cause of death and in many cases do not comply with legal requirements.

Wallenstein,⁸ in speaking of the coroner's office in New York City before the adoption of the medical examiner system says

The system of coroners' juries, both as to law and practice, makes the administration of justice in the coroner's court a scandal and a farce. Coroners' juries can readily be and actually have been packed with friends of defendants before them. In the field of criminal abortion, far from serving to detect crime, the coroner's system has become the agency for shielding defendants and concealing criminality. In connection with abortion cases coroners have called or failed to call juries as best suited their purposes, have packed juries, have intentionally failed to call necessary witnesses or to cause police investigation or to utilize the results of such investigations when made. Where the available facts have fairly indicated that death was due to criminal abortion, coroners have without further investigation attributed death to causes unknown.

Imagine, then, the detection of crime,

the arrest of individuals, the necessity for necropsy and the determination of the cause and manner of death dependent upon the verdict of a jury unschooled in law or medicine and too often woefully lacking in general education or knowledge.

The Incumbent The efficiency of any system depends mainly upon the type of men employed. In this respect the coroner's system is no exception. It is possible but infrequent to have a good honest coroner's office. When such conditions occur they are handicapped by the limitations of a law which states in effect that they can investigate only cases of known violent death. Some good coroner's physicians have actually been sued for investigating a suspected violent death.

Herzog⁸ states that

The law as to the rights and duties of the coroner varies in different States of the Union, yet in nearly all States where the office is a political one and only in exceptional cases falls into the hands of a physician who is scientifically trained for medico-legal investigations and takes sufficient interest in the work.

Wallstem,⁹ speaking in 1915 of the coroner's office in New York City after consolidation of the greater city up to the time of the medical examiner's act, says

Of the sixty-five men who have held the office of coroner, not one was thoroughly qualified by training or experience for the adequate performance of his duties. Many of the coroners are absurdly ignorant both as to the legal and the medical aspects of their work. The type of man usually selected to the office of coroner is entirely unfit for the exercise of judicial functions as shown by the general practice of establishing compromising relations with corporations and others who are frequently involved in litigation before the coroner's court.

It will be seen that the position of coroner usually is held by an individual whose incompetence is matched only by his venality.

Character of work performed by Coroner It is obvious to anyone who has studied the subject with an unbiased mind that wherever the coroner's office prevails, ignorance, corruption, and inefficiency is the rule. One has but to follow in the newspapers the crimes handled by coroners to realize that when the coroner enters a case confusion and bungling begin.

Wallstein⁷ again states in his survey (1915) of the coroner's office of New York City that

The elective coroner in New York City represents a combination of power, obscurity, and irresponsibility which has resulted in inefficiency and malfeasance in the administration of the office. With constant temptation and easy opportunity for favoritism and even extortion, with utter lack of supervision and control, and without the slightest preparation and training to create in the coroner's mind a scientific and professional interest in the performance of his duties, the present system could not be better devised intentionally to render improbable, if not impossible, the honest and efficient performance of the important public function entrusted to his office. Civil rights and liabilities have been profoundly affected by the findings of the coroner, whose action in many cases has been a travesty on justice. Coroners have abused their powers to compel the employment of favored undertakers by the unfortunate families of deceased persons. Attempts have not infrequently been made to extort sums of money from insurance companies in return for findings in the companies interest. Most of the coroner's physicians in New York City have been drawn from the ranks of medical mediocrity*. The character of their medical examinations may be judged from the fact that the keeper of the morgue testified that they often merely look at the head of the body and that an examination lasting five minutes was an infrequent occurrence. The incompetent medical work of the coroner's physicians persists in the investigation of criminal deaths and deprives the community of an absolutely necessary deterrent to crime. Numerous homicides have undoubtedly failed of detection by reason of this fact. So far as the activity of the coroner's office in New York City is concerned, infanticide and skillful poisoning can be carried on almost with impunity. In the most important criminal trials, coroner's physicians frequently testify only from memory. The present coroner's system cannot be continued in this city except as a public scandal and disgrace. It should be abolished immediately. In order to obtain effective performance of the work which the coroner's office should do, the district attorneys of New York and Kings Counties have organized homicide bureaus in their own offices. These bureaus make complete

*In fact what saved the face of this office for years was the magnificent work of the late Otto Schultze, a coroner's physician for many years and one who unceasingly worked for a medical examiner system.

and independent investigation in each case. Through long experience, they have come to pay practically no attention to the coroner's investigations, findings, or conclusions. On the contrary, the district attorney's investigations are sometimes impeded by the bungling interference of the coroner.

Adler,⁹ in a survey of the condition in Cleveland in 1921, states that

Indeed, we cannot entirely suppress a sense of the ridiculous when we read over the list of causes of death as officially recorded by the coroner of Cuyahoga County for the year 1919

Consider from the point of view of law enforcement and the public safety, such records as these

No 22964	Found dead.
No 22987	Found dead in shanty
No 22990	Head severed from body
No 23035	Could be assault or diabetes
No 23050	Premature or abortion
No 23187	Diabetes, tuberculosis or nervous indigestion
No 23484	Found crushed
No 23551	Died suddenly after taking medicine.
No 23574	Body entirely burned.
No 23686	Shock.
No 23687	Body covered with sores

As a result of public opinion and the work of a Citizen's Committee the coroner's office was abolished in 1915 in New York City, but there was enough political influence to prevent the medical examiner system from going into effect until 1917

Dr Norris often told the story that during the days of the coroner's office in New York City, when the coroner and his physician were paid by the piece for work done, they would pull a body out of the East river, one coroner and his physician would examine body on dock at East 26th Street and sign the required certificate, if business was dull, the morgue keeper would throw the body back into the river with rope attached, and a short time afterward pull it out again and notify another coroner and his physician, this procedure often being repeated over and over

In summary, the opinion of Du Vivier¹⁰ may be quoted as applying to most coroner's offices in this country

A dispassionate study of the office leads one to the inevitable conclusion that it is an institution of government wholly unsuited to the needs of the present day. It is obviously expensive and clearly inefficient. In

some cases it is positively dangerous to thus entrust untrained men with important work. In a word, I know of no better illustration of the saying of Goethe that "Nothing Is More Trouble Than Active Ignorance." The coroner does nothing that must not be done over again. No reliance can be placed on anything he has done nor can he be trusted to do anything right. Every case in which there may be criminal responsibility must be watched. The body of the deceased is barely cold before the experienced prosecutor begins to guard against the probable mistakes of the coroner—the shifting of the furniture of the scene of the crime, the unskilled handling of witnesses, the insufficient identification of the body at the necropsy, the careless identification of the bullet, or knife, or poison, or the clothes worn by the deceased the danger of newspaper publicity, the observance of the technical requirements of an antemortem statement, the injury from unguarded and unrestricted cross-examination of the people's witnesses, and the many dangers in every homicide case of importance.

Leary states¹¹

This country inherited the coroner system through the colonial and provincial laws that were adopted into its judicial system on the founding of the United States. Under the primitive conditions that existed before police and judicial systems were developed, the coroner and his jury fulfilled a useful purpose. When a death arose from violence two basic questions had to be considered. 1. What caused the death? This could be answered only by medical investigation. 2. Who caused the death? This was a matter for the police and the courts to determine. In answering these questions the coroner was called on to straddle the functions of two professions, medicine and law. Moreover, the antiquated machinery which he governed, creaking with age, operated so slowly that modern police and judicial systems made its findings ineffective and his efforts unnecessary. Under modern conditions the coroner is literally a fifth wheel on the judicial coach, and an unnecessary expense. The controversy concerning the coroner system that has been going on in England during the last two years is the inevitable protest of progress against an anachronism. Antiques belong in museums and should not continue to be parts of the government of every day modern life. The compromise report of a royal committee appointed to correct faults in the coroner system has met with the disapproval of the British Medical Association, as was to be expected.

Effects of an Inefficient Coroner's Office

The disastrous effects of the widespread use of the system of coroner's offices in this country is shown by the attitude of the public and the medical profession.

Attitude of the public. Coroner's physicians and medical examiners and those performing the medicolegal autopsy are looked down upon as the lowest type of politician and not as leaders in their profession.

Since the funds and equipment for this work are furnished by the state, and since there can be no outside financial support, and since this office carries little political patronage, the importance of the Coroner's Office has been slighted, and the budgets and allowances have been so very low that the position will not attract or maintain a high class man.

In such localities where graft exists, and they were and still are plentiful, the positions are held by the lowest type of ward-healing politician, who employs doctors of the lowest medical and social type. Of course it must be stated that there are some competent coroners and coroner's physicians, but a really honest and efficient coroner is almost as rare as the dodo. A change in name of the office alone will not improve any system if those in charge remain ignorant.

Under this system it is almost impossible to obtain funds or endowments to maintain special research along with and in connection with this work of such a practical nature and of such practical value, because of the fact that this agency for the actual preservation and protection of human life is so closely associated with a political system under which the appointees are usually men of mediocre ability. Even under the medical examiner's system the preparation of scientific exhibits for the education of the profession and the laity, the publication of scientific works, etc., are for the most part financed by moneys taken from the poor pockets of the medical examiner himself.

The great foundations might well feel, and I am told that some of them are beginning to see, the importance and the possibility of endowing medicolegal institutes in large and responsible cities. Millions of dollars are now spent on re-

search which brings far less immediate results than medicolegal research which could prevent and reduce the wastage of useful human beings in accidents, by industrial hazards and poisonings, by murder, suicide, and the Great American Juggernaut—the automobile

Attitude of the medical profession For years the medical profession has had not the slightest interest in the medicolegal autopsy and forensic medicine

Except for a few lectures in medical ethics to enable students to pass their state boards this subject has not been taught. There have been, therefore, no chairs of forensic medicine in this country until recently when such positions were established at Harvard, New York University College of Medicine, and lately by a few other universities

No journals devoted to the scientific reporting of medicolegal cases exist in this country. Recently in order to attempt to find out whether there was a demand for such a publication, I edited a department of forensic medicine in a surgical journal. However, I could not, in all this country, find enough interested and competent men to write authoritative articles and it was impossible to continue this publication

In any campaign against crime in this country the medical link is the weakest, and God knows some of the other links are rusty enough

The main reason for this lack of interest shown by the members of the medical profession has been the realization that if they studied and took special training to fit them for this type of work as a life's career, there would be no future for them, since the politician would rarely appoint qualified men. This fact should be remembered, for when any of our public systems collapse there is always a flattering tendency to blame the medical profession if it has been at all involved

The medical profession is, however, by no means blameless. Professors of pathology in this country have with few exceptions been experimental pathologists and not morbid anatomists. They have seldom been interested in medicolegal pathology,

It is difficult moreover, for pathologists to realize that medicolegal autopsies when properly performed are nearly always more thorough than permission autopsies,

since official determination of the cause of death allows the examination of the head, cervical spine, organs of mouth, neck, etc., much of which is prohibited in permission cases

The rapidity with which the medical examiner must work is also misunderstood and has given the impression that his work is incomplete and slipshod. A medical examiner must sign a legal death certificate in a couple of hours and cannot wait months to find the cause of death. We have seen neuropathologists carefully remove a brain with all the cranial nerves attached thereto and preserve the entire brain without section, to report it at a clinical pathological conference as a case of internal hydrocephalus due to arachnoid adhesions, when a section of the brain some time later showed a tumor of the cerebellum pressing on the fourth ventricle. This habit of neuropathologists in pickling brains for months is common. On section they usually are full of holes caused by gas due to imperfect hardening, and from these sections we have built up our knowledge of the finer structural alterations in the cells of the nervous system

One may well imagine the amusement of a busy medical examiner when he is informed that pulmonary embolism is unusual, for each week he sees long clots, short clots, fragmented clots, twisted clots, etc., occurring in both traumatic and non-traumatic cases, or when he is told that cardiac aneurysms are unusual, and he observes them almost every day as the sequellae of a coronary atheroma in cases of sudden death

Much of this ignorance is due to the fact that a large number of cases seen by the medical examiner are seldom seen even in large hospitals, and that these men are constantly seeing cases of vital importance both to the surgeon and the internist, and unless medical examiner's material can in some way be used for educational purposes much invaluable information is lost to the medical profession

Continental System

The continental system is said to be the most efficient and scientific known. In continental Europe no such office as that of coroner exists. In Austria, Germany, France, Italy, Russia, and the Scandi-

navian countries forensic medicine and the scientific detection of crime reach the highest degrees of efficiency. In these countries the daily application and utilization of the medical and other sciences in the administration of justice are brought about through organizations known as "Institutes of Legal Medicine." According to Schultz,¹² such institutes are an integral part of the ministry of justice, and since the State controls education they are also a part of the university system.

Housing Such institutes are usually housed in separate buildings, connected with or adjacent to the large municipal hospitals and consequently near the greatest activity and source of material. From an architectural standpoint alone, many are magnificent, dignified, and with splendid working quarters. They are equipped with everything required. For instance, many of the necropsy rooms have provision for roentgen ray examination of the cadaver, an equipment practically never seen in necropsy rooms in this country.

Staff The director is usually a pathologist of renown and professor of forensic medicine at the university. He has permanent tenure of office and carries with him the social respect and rank due all university professors. His staff is likewise connected with the university in various capacities.

Main function The main function, of course, is the detection of crime. The accurate viewing of the body at the scene of death followed by the necropsy to establish the exact cause of death require medical work of the highest order. For this work such institutions are equipped with adequate morgue accommodations, facilities for the recovery, identification, and preservation of bodies, excellent necropsy rooms, laboratories of pathological anatomy and histology, laboratories of chemistry and toxicology, laboratories of bacteriology, serology, and immunology, proper photographic equipment, and museums and libraries of legal medicine.

By its close connection with the medical school and other departments of the university the institute may request aid from any of the departments of the natural sciences, especially physics and general microscopy. In Austria and Ger-

many, for example, experts are nearly always taken from the teaching staff of the medical schools, and provisions are made that the professors of the medical colleges as well as the professors of chemistry shall be called as experts when absolutely necessary.

In Austria not only observation of the body but a necropsy also is demanded in every case in which there is a possibility of criminality. In both Austria and Germany detailed rules prescribe under what circumstances and in which manner necropsies shall be performed.

Subsidiary functions In some localities, in addition to the main functions of these institutes, the various departments of psychiatry, abnormal psychology and delinquency, and criminal anthropology under the guidance of the institute, may furnish the courts with unbiased testimony in cases where this type of expert testimony is necessary.

Laboratory of Police Science Closely associated with the institutes of legal medicine, and often in the same buildings, are the laboratories of police science. These laboratories deal with the application of scientific methods and facts in the detection and solving of crime, and in the identification and apprehension of criminals, suspects, and important witnesses. They evaluate and preserve circumstantial evidence and utilize fundamental medical sciences and all other natural sciences which may in any way aid in fixing criminal liability.

Results The main result of the continental system is that it allows the daily application of medical sciences to the needs of the law and justice by highly trained experts in an impartial and better manner than under any other system yet devised.

The advantages to the institutes with a university connection are that the staff of the institute is given university rank and permanent tenure of office, and that forensic medicine is placed on a dignified university level. Opportunity is afforded for research, and publications may be made under the auspices of the university.

The advantages to the university are. The assurance of proper undergraduate teaching of medical jurisprudence by means of practical demonstrations under the guidance of experts, a great increase

in pathological material becomes available for teaching and research, especially affording opportunity for the study of lesions and diseases not usually encountered in hospitals, such as sudden deaths, occupational poisonings, etc., and finally, graduate teaching and training of medicolegal experts becomes possible.

While it may be true that on the continent, the physical equipment of the institutes makes for the finest work in the performance of a complete medicolegal autopsy, it is said that at many of the larger institutes there is laxity in enforcing the requirement that medical experts view the body at the site of crime. However, experience has shown that in many instances a careful analysis of details at the scene of the crime by the medical officers in conjunction with the police, is more important even than the actual necropsy. The late Dr. Norris insisted upon this important feature in the administration of his office, and the Medical Examiners Act specifically requires that a medical officer observe and take charge of the body at the scene of the crime. I believe that the number of investigations made by Dr. Gonzales and his Associates in the Office of the Chief Medical Examiner of New York City far exceeds that of any other similar institute in the world. As a result the experience, training, and methods of investigation surpass all others, all that is lacking to make this the outstanding agency of its kind, is more equipment and financial support.

Medical Examiner System Nearest Approach to Continental System

The medical examiner system as practiced in New York City and in Essex County (Newark), New Jersey, is the nearest approach to the efficient continental method. The office of coroner was abolished in Massachusetts in 1877 and the medical examiner's system introduced. The law passed at that time has remained unchanged in its essential features. Although the medical examiner's system of Massachusetts has been recommended as a model for communities wishing to abolish the coroner's system, it does not compare with that used in New York City and in Essex County, New Jersey.

Massachusetts system In Massachusetts the medical examiners are ap-

pointed by the governor, who selects "able and discreet men learned in the science of medicine" for terms of seven years. Their investigations are limited to "dead bodies of such persons only as are supposed to have come to their death by violence." They are allowed to perform necropsies only "upon being authorized in writing by the district attorney, mayor, or selectmen of the district." Inquests must be held on all railroad accidents and the district or attorney general may direct an inquest to be held in the case of any other casualty, if he so deems necessary. Herzog,¹³ states that under this law the district attorney or attorney general has practically all the rights which the coroners held heretofore, except that the medical examiners, or "coroner's physicians," as they were called under the coroner's system, are appointed by the governor instead of the coroner. Furthermore, while the two medical examiners in Suffolk County (Boston) are skilled pathologists, those in other parts of Massachusetts are general practitioners of medicine. While the system in Massachusetts is a great deal better than the old coroner's system, it still is far from perfect, if the whole State is judged not by Suffolk County alone but by the average of the rest of the State.

New York City systems While the medical examiner's system was adopted for New York City in 1915, the first chief medical examiner was not appointed until January 1, 1918, the delay being due to the political ravings of the deposed coroners. The law states that "there is hereby established the office of chief medical examiner of the City of New York. The head of the office shall be called chief medical examiner. He shall be appointed from the classified civil service list and be a doctor of medicine and a skilled pathologist and microscopist." The office is, therefore, appointive under civil service, the tenure being indefinite and removable possible only by the municipal civil service after trial upon charges filed by the mayor.

The requirements are such as to forbid the appointment of some mediocre political physician. The law states that candidates must have a degree of M.D. from an approved institution of recognized standing, they must be skilled pathologists,

learned in the field of legal medicine, both with regard to the literature and the present state of that science. They must present satisfactory evidence of having done, in an official connection, at least ten year's work in the pathological laboratory of a recognized medical school, hospital, asylum, or public morgue, or in other corresponding official capacity, and of having performed at least five hundred necropsies. They must possess a theoretical or critical knowledge of bacteriology and toxicology, sufficient to enable them to appraise intelligently the work of expert deputies. It is useless for persons who have not had at least this experience to apply for examination. Candidates are required to submit with their applications copies of their publications.

All deaths by violence, sudden deaths, and deaths under circumstances where crime may be suspected must be reported to the chief medical examiner. After the report, he must "go to dead body and take charge of same." Therefore, until the medical examiner has completed his examination, no one, not even the police, may take charge of or remove the body or any object whatsoever. Neither the police nor the district attorney have any right to interfere with his actions. Whenever in the opinion of the medical examiner a necropsy is required, it may be done. He does not need to wait for any jury or inquest or for written permission from the district attorney. No inquests are held in New York City under this system, the judicial functions now being held before magistrates in the homicide courts and by the grand jury under the guidance of the district attorney, or before a referee in compensation cases.

Essex County (Newark) N J system In 1927 the medical examiner system was adopted in Essex County, in which Newark is situated. It was copied from and is almost the identical replica of the New York office.

Summary Since the main advantage of the medical examiner's system over that of the coroner's system is the increased ability to determine the exact cause of death by necropsy, we may sum up the situation, as follows:

In the United States, wherever the coroner's system is still in existence, the coroner's physician performs a necropsy whenever

the coroner and his jury so directs, in Massachusetts, where the medical examiner system is in force, the medical examiner performs a necropsy whenever so directed by the district attorney, the mayor, or the selectmen (of course the district attorney usually gives the medical examiner verbal blanket permission to go ahead, but if for any reason cooperation ceases, the medical examiner is legally powerless), while in New York City and Essex County the medical examiners are given full charge of any body to which death has come suddenly, by violence or under suspicious circumstances. They may investigate the death in any way they see fit, being absolutely unhampered, and may perform necropsies whenever they deem it necessary.

The medical examiner's system in New York City and in Essex County (Newark) are the two outstanding agencies of their kind in the country. It is safe to say that they are the only American systems which compare with the highly efficient continental system. Those cities under the coroner's system can only be compared to the system existing in England, which is notoriously inefficient, being saved only by the low crime incidence due to the inbred English characteristic of obedience to the law and order, and the covering of important crimes by a senior officer of Scotland Yard of such prominence as Sir Bernard Spillsbury.

Schultz,¹⁴ in a summary of this law, states that

The New Jersey law follows in its general provisions that of New York City. The medical examiner, although empowered to administer oaths and examine witnesses, is relieved of one of the worst features of most coroner's laws, namely, coroner's jury, by a paragraph that provides that the medical examiner shall take over the duties previously performed by the coroner but that the "chief medical examiner shall not be required to summon a jury of inquisition." Inquisitorial duties usually assigned to the coroner belong properly to the prosecutor's office or to the police departments, where the New Jersey Law places them. The New Jersey law might well be used as a model by other States that may awake to the fact that the coroner's office is an inefficient anachronism.

Authority for necropsy A bad feature of most laws relating to the coroner is that such laws fail to define clearly the authority of this official in cases that must be referred to him, but in which, after in-

vestigation, he can find no reason to suspect violence. The right or duty of the coroner to perform a necropsy does not seem to be clearly established. He is also subject to civil suit. (In a recent case in New York State, a coroner's physician investigated and autopsied a man found dead with extensive wounds of the head, and he was later sued in the civil courts for performing an autopsy and for causing the relatives of the deceased to suffer severe "mental anguish.")

The New Jersey law briefly but clearly defines the authority to perform autopsies as follows:

If the cause of such death shall by examination be established to the satisfaction of the medical examiner in charge, he shall file a report thereof in the office of the chief medical examiner. If, however, in the opinion of such medical examiner, an autopsy is necessary, the same shall be performed by the chief or assistant medical examiner.

These two short concise sentences, the first defining the type of cases that shall be reported to the medical examiner and the second authority to perform a necropsy when necessary, form two legs of the tripod which supports the whole medical examiner's system. The third leg represents the type of man that is selected as chief medical examiner. It represents the authority which at once places the medical examiner system above that of the coroner's system in efficiency and usefulness to the public welfare.

The Coroner's Office or the Medical Examiner System—Which?

Any comparison between the two systems must obviously take into consideration New York City, with a population of over 6,000,000, using the modern medical examiner system and Chicago, the second city of the country, with a population of about 4,000,000, still using the ancient coroner's system.

It may be roughly stated that about twenty per cent of the total number of deaths occurring in New York City and in Essex County are referred to the medical examiners, while in Chicago less than ten per cent are referred to the coroner. Furthermore, of the cases referred to the medical examiners only about fifty per cent are deaths due to violence (homicide, suicide, and casualties). Over fifty per cent of the cases investigated

represent nonviolent deaths. In Chicago, however, over ninety-three per cent of the cases referred to the coroner are violent deaths and only five per cent due to natural causes. In other words, there are some ten per cent of the total deaths in Chicago, which under the New York and New Jersey Acts would be reported to the medical examiner, which are never reported to the coroner. In this group murder, poisoning, criminal abortions, and what not can easily escape detection.

The physicians of Chicago have long recognized the deficiencies of the Cook County Coroner's Office, as have the local press, but not the politician. In 1933, the Institute of Medicine of Chicago issued a brochure for distribution, some of which reads, as follows:

The Coroner's Office or the Medical Examiner System—Which? An office established in the twelfth century to serve the interests of the crown or one established to serve the interests of the public of the present time, the incumbents usually selected by election, or appointed by the Governor or Civil Service Commission, the qualifications being none in most States, or physicians who are graduates of accredited medical schools, with special training in pathology, the duties of the office to be two-fold, a medical one to determine causes of death and a legal one to hold damnable inquests, (which must be repeated by the State's Attorney if he must prosecute), or a medical duty only, the legal investigations being made by the District or State's Attorney, do you want the work to be done poorly, because of unqualified incumbents, antiquated laws, political influences, or all of these, or to have the work done excellently because of qualified incumbents and clearly defined up-to-date legislative enactments? Which gives the taxpayer more for his money, better safeguards the interests of society, makes for better administration of criminal justice? The nature of the work performed covers the investigation of deaths due to suspected criminal homicide, in which criminal prosecution may follow, investigation of deaths due to suicide and casualty, which may give rise to claims for accident, disability, or life insurance, or for workmen's compensation, investigation of sudden deaths unattended by a physician, to exclude crime and to authorize legal death certificate.

One-Fifth of All Deaths Reportable to Medical Examiner

In large cities functioning under a modern medical examiner's law, one-fifth,

or twenty per cent, of all deaths must be investigated by legalized authority to determine when, where, how, and by what means the deceased came to his death.

Few members of the medical profession realize the very great amount of work this necessitates, the necessity for a rapid and practical handling of the situation, twenty-four hours of the day, every day of the week with no rest on holidays, Sundays, etc.

In New York City with a total death rate of around 80,000 per year, about 15,000 cases must be investigated by the Chief Medical Examiner's office, the office signing some twenty per cent of the death certificates. As about twenty per cent of these cases require an autopsy to establish the cause of death, it is easily seen that there is in such an office a great source of pathological material far exceeding that ordinarily used for medical training and education a great part of which could be used for teaching purposes.

Almost fifty per cent of the cases reported to medical examiners are *violent deaths*, due to casualties, suicides, and homicides (chiefly of surgical interest), the remaining fifty per cent are sudden deaths due to natural causes, such as coronary atheroma and its sequellae, syphilitic aortitis, etc. (mainly of medical interest).

Violent Deaths

It is generally regarded by both the laity and the medical profession that coroner's physicians and medical examiners see only cases of murder, suicide, and deaths due to accident and trauma and that these cases are of very little medical interest. Serious consideration and study of such cases are even looked upon by some professors as below their dignity and of little use in promoting scientific medicine. I know of no more serious mistake.

It may be a source of surprise, therefore, to realize that in a modern medical examiner system, the violent deaths form a little less than fifty per cent of the total number of cases investigated and that a trifle over fifty per cent are deaths due to natural causes, which on account of their suddenness and suspicious circumstances require investigation and must be signed out by some legalized authority.

Again taking New York City as an example, each year the medical examiners investigate some 6,000 to 7,000 deaths due to violence.

The violent deaths consist, chiefly, of highway accidents, homicides and suicides by cutting, stabbing, shooting, etc., injuries due to falls, burns, industrial accidents, etc.

Many of these cases come to the attention of surgeons during life, and the lesion found, such as the various types of skull fracture and traumatic cerebral hemorrhage, rupture of solid and hollow viscera, fractures of extremities, ribs, and spine, sudden deaths from pulmonary embolism, and infected wounds of extremities and body, are of surgical interest.

Furthermore, the determination of the exact cause of death, by autopsy, is almost mandatory in most of these cases, since accurate data must be obtained for criminal, civil, and compensation courts, in the proper detection of crime, the fixing of criminal negligence, and the administration of justice. For these reasons, autopsies are performed in the majority of these cases.

Some idea of the amount of necropsy work performed by medical examiners may be gained from the reports of the New York City office which performs over 3,000 (population 7,000,000), and the Essex County office with over 800 necropsies a year (population 850,000).

When it is realized that some of our largest medical centers doing extensive research work and teaching a considerable number of students, have an autopsy service of not more than 300 to 400 cases a year, and many of these only partial and therefore incomplete, it may be seen that one of the greatest sources for securing accurate data of both surgical and medical interest, namely medical examiner's autopsies, is being lost or made little use of as the attendance at medicolegal autopsies is usually small. Many men occupying the chairs of pathology in this country are less interested in medicolegal work than they no doubt would be if it could be done on a sound scientific plan.

Murder Homicide forms about three to four per cent of the total number of cases reported. In this geographic area shooting predominates, because of the

quick get-away, in Harlem, for instance stabbing and cutting may still predominate. Shooting has always been a common method of committing murder. It apparently reached its highest peak of popularity in the United States and incidentally in the world, during the last few years of our recent prohibition fiasco, when it became the chief method of killing gangsters, racketeers, hi-jackers, hold-up men, etc.

Homicides by shooting form over fifty per cent of the total murders occurring in and around the metropolitan district of New York. The methods of killing next in frequency are stabbing and cutting, assault and battery, poisoning and strangulation by ligature and hands. Murder by shooting and cutting and stabbing form over seventy per cent of the total murders.

In main the popularity of shooting lies in the fact that close contact with the victim is unnecessary, the danger of a fight is avoided, and the automobile usually affords a quick getaway.

Every case of murder must be autopsied and every means used properly to detect the crime and apprehend and punish the murderer. The case must be air-tight from the medicolegal angle.

Suicide. Suicide forms about eight per cent of the total number of cases reported to the medical examiner functioning under a modern medical examiner's act. Suicidal asphyxiation by means of illuminating gas is the most common method employed. This is the usual method of committing suicide in civilized countries, because of its accessibility, cheapness, and supposed freedom from pain.

In New York City during a five-year period (1928-1932), in a total of 7,219 suicides there were 3,003 suicides by illuminating gas or forty-one per cent of the total suicides. The number of suicidal asphyxiations from carbon monoxide would be much larger if one included many probable suicides, which, because of a reasonable doubt or from lack of proof, had to be classified as accidental.

Other methods of suicide in order of frequency are hanging, jumping from buildings, shooting, poisoning, stabbing, and drowning.

During this same five-year period in New York City there were 5,251 deaths

from carbon monoxide poisoning which includes all the illuminating gas, auto exhaust, and coal gas cases. This is an average of over 1,000 deaths a year. As a cause of violent death it is exceeded only by highway accidents, to which it runs a close second.

Certainly over one-half of these deaths all over the country are accidental and due to faulty and leaky gas fixtures, carelessness, intoxication, and a lack of interest by laity, hospital authorities, and the medical profession in quick, competent resuscitation methods in asphyxiation.

Many of these cases require autopsy and careful investigations to exclude crime, criminal negligence, etc. Yet many can be signed out when careful examination of the body and its surroundings and the history of the case indicate the obvious cause of death.

Casualties. Deaths caused by injuries in accidents of all kinds form about thirty-five per cent of the total number of cases referred to the medical examiner. Of these, those due to the automobile and to falls greatly predominate.

The lack of interest by most of the medical profession in deaths due to accident is often quite incomprehensible. There are organized societies for the prevention of tuberculosis, cancer, venereal disease, senility, etc., but almost no leadership and no initiative has been shown among the profession in the prevention of accidental injuries which cripple, maim, and kill people—and chiefly those people who are of important economic value to the community.

Some idea of the extent and number of accidents in this country may be gained from last year's report of the National Safety Council. In 1935 there were 99,000 deaths due to accidents, 31,500 due to accidents at home, in which falls formed forty-four per cent, 17,500 in public accidents, falls, drowning, burns, etc., and 13,600 as the result of occupational or industrial accidents. There were 365,000 persons permanently injured, 107,000 by the automobile and 9,100,000 temporarily disabled, of which 1,170,000 were injured in auto accidents. Property damage, wage loss, and medical expenses were estimated to be over \$3,000,000,000.00.

Under the modern medical examiner's system the majority of these deaths re-

quire careful investigation and exact diagnosis by autopsy in order to fix responsibility and to settle claims for accident, disability, life insurance, and for workmen's compensation in an equitable manner

Toxicological examination of the brain for alcohol in pedestrians struck and killed outright, or surviving but a few hours, show that when struck about twenty per cent of these individuals are drunk. How many of the drivers were drunk it is impossible to state, since there are no reliable tests for intoxication during life except by the examination of the spinal fluid, certain crime laboratories and police statements to the contrary notwithstanding

Deaths Due to Natural Causes

Natural deaths Sudden deaths from natural causes when in apparent health, when unattended by a physician, deaths within twenty-four hours after admission to a hospital or institution, and deaths in any unusual or suspicious manner are reportable to the medical examiners

Such deaths form a little over fifty per cent of the total deaths investigated by the medical examiner's office. Heart disease is the predominating cause of natural death

These deaths often can be signed out (death certificate issued) after a careful history and investigation, but many require in addition, careful autopsy and often extensive toxicological examinations to exclude crime and to establish definitely the cause of death

Few are more fitted to discuss sudden death than experienced medical examiners. He daily sees actual cases of sudden death, such as those occurring on the street, while at work, in public places, factories, at home without medical attention, and those dead on arrival at hospitals. Sudden deaths in hospitals are usually nothing more than unexpected deaths during the course of a chronic disease

The majority of sudden deaths occur after forty-five years of age (summit of cardiovascular life), sudden death in the age group from ten to thirty-five years being unusual. Over eighty per cent of these deaths occur in males, illustrating the detrimental effect of hard physical

work (especially in syphilitic heart disease), exposure, and worry (business men)

In nearly 2,000 autopsies on such cases of sudden death I have found certain relative proportions of the causes which may be of practical value. If a physician or ambulance surgeon be called to a house, factory, or office building, and find a dead person over ten years of age (infants are excluded in this series because of the difficulty of properly interpreting the cause of death) and finds no evidence of violence or of obvious poisoning, he can make, with a considerable degree of accuracy the following guesses as to the cause of death. Usually, of every ten cases of sudden death, (most occurring in the 40 to 55 year age group) seven die as the result of organic heart disease, of which five are due to arteriosclerotic heart disease (coronary atheroma with its sequellae and hypertensive heart disease), one to syphilitic heart disease, one to rheumatic heart disease, one to some disease of the nervous system (ordinary apoplexy not usually causing sudden death), one to a lesion of the respiratory system (lobar pneumonia predominating), and one to a variety of diseases in which sudden death may at times occur. If we add these cardiac deaths to those due to hemorrhage in other viscera (thrombosis, embolism, etc.), it will be seen that over ninety per cent of sudden deaths are caused by lesions in the cardiovascular system (heart arteries, arterioles, capillaries, and veins)

One has but to spend a short time with the medical examiner to realize the importance of coronary disease and its sequellae. In the very large number of deaths, occurring chiefly in males between the ages of forty and fifty-five, due to organic heart disease, in seventy per cent of the cases, coronary atheroma and its sequellae play the most important role. The question arises, are any of the deaths preventable, and what relation do they have to overeating, persistent driving of a tired body, overplay, hurry, anxiety, intense emotions such as anger, fright, worry, etc. No one has greater material and better opportunity to study coronary disease than the medical examiner and it is to be hoped that one day this will be realized, and research and educational fa-

quick get-away, in Harlem, for instance stabbing and cutting may still predominate. Shooting has always been a common method of committing murder. It apparently reached its highest peak of popularity in the United States and incidentally in the world, during the last few years of our recent prohibition fiasco, when it became the chief method of killing gangsters, racketeers, hi-jackers, hold-up men, etc.

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be housed in separate buildings. On the contrary, the ideal medicolegal institute would have all these facilities under one roof.

Recommendations

Abolition of the Coroner's office with its damnable inquests and its replacement with a uniform medical examiner system.

The medical examiner's system is firmly established in this country as demonstrated by its efficiency in Boston, New York City, and Essex County. It has been so satisfactory in these locations that it is doubtful if the public, judiciary, police, and press would ever stand for a return to the ancient coroner's office. Still constant watch over legislatures is necessary as the politician can almost overnight ruin the progress that has been made. It is well-known that certain politicians in New York City have repeatedly boasted that they would get their grafting coroner's office back in the near future.

The present coroner's office as it functions in most of the United States should be abolished, and replaced by a medical examiner system similar to that used in New York City. It is an anachronistic institution which has conclusively demonstrated its incapacity to perform the functions customarily required of it.

Schultz¹⁸ is of the opinion that where it is impossible to abolish the coroner, because the office is a constitutional one, and the State constitution cannot be readily amended, or because of veneration for things of antiquity, or for other reasons, the office should be modernized. *First*, by making the coroner simply an elective administrative official, and by creating as chief deputy coroner a medical officer with proper qualifications serving continuously under civil service, and transferring the inquisitorial duties to the police and prosecutor; *second*, by revising the law so that it will clearly define a medical examiner's legal status and give proper authority for necropsy if necessary. Personally, I do not believe an ill-defined political office can be reformed. Any city having a coroner's system is not efficiently organized for the detection and prosecution of crime.

In any concerted campaign against crime we must improve and make more efficient not only our slipshod methods of apprehension by proper police training

and the establishment of police laboratories, etc., but we also must pay more attention to the medical detection of crime which, with few exceptions, is even more neglected. This last can never be accomplished under the present coroner's office. The teaching of forensic medicine and the training of expert personnel can never reach a high plane of efficiency until this office is abolished.

In the replacement of the coroner's office by the medical examiner system, it must be more than a change in name. Such medical examiner's offices must be headed by scientifically trained and competent pathologists, selected and retained under civil service, and compensated by a salary which will attract men of high caliber and ability who have adequate scientific training.

The medical examiner must be provided with a competent staff equipped with adequate modern scientific apparatus for the study of toxicology, bacteriology, and the other sciences necessary in the scientific investigation of the causes of death. Wherever possible, these specialists should be members of the medical examiner's staff, selected and retained under civil service at adequate compensation.

In addition to the medical duties, there must be required of the medical examiner's office, in all urban centers, the furnishing to the police, prosecutor, and courts, of expert medical assistance at every stage in the investigation, prosecution, and disposition of criminal cases of every description.

In rural territories districts should be formed under the jurisdiction of the medical examiner's office and laboratories in the nearest city. Legislative provision should be made for this cooperation between such rural districts and the nearest central office.

A prominent attorney of Chicago, who expressed himself as favorable to the establishment of institutes of legal medicine, coupled his approval with objection to abolishment of the coroner's office in the following words:

It might be possible to change or transfer some of the incidental functions now exercised by the coroner, but it would never do to abolish the office. It is one of the oldest in our legal history, derived from the earliest days of Anglo-Saxon law, and its

cilities will be placed in close connection with these offices

Scientific Crime Detection

It will be noted throughout this critical review that in all cases investigated by the medical examiner or coroner two outstanding questions are always involved *First*, "What caused death and does crime or criminal negligence exist?" *Second*, "If so who caused death?" The primary function of the medical examiner or coroner is to answer the first question, and all other features of his office are secondary to this duty. Any educational system built around such offices, therefore, are of secondary importance. This fact must never be lost sight of, and this is one reason why it will be difficult—yet not impossible—to build up university teaching around this purely legal authority.

The answer to this first question is entirely medical, requires the highest pathological skill and training, and cannot be properly performed by the ordinary practitioner of medicine or surgery. It involves what I have called the "Medical Detection of Crime."

Medical detection of crime This consists in the examination of the body at the scene of the death or crime by the medical examiner in company with the police and homicide squads, the performance of a careful medicolegal autopsy, and the work done in the laboratories of histopathology, bacteriology, serology, immunology, and toxicology of the medical examiner's office or of the university. In addition, any other department of the university such as the natural sciences (physics and chemistry) or other departments such as engineering, architecture, etc., may be required for aid in the solution of the cause of death. The use of many sciences may be necessary to make it difficult, if not impossible, for one human being to take the life of another without detection.

There must be a distinction, therefore, between the medical laboratories of the medical examiner and the so-called "Crime Laboratories" of the police. They must be separately organized, under separate control but work in perfect accord.

This distinction may not appear at first sight to be important. However, when one realizes that legislators interested in crime may at any time pass loose laws

placing all these laboratories together, under a police officer for example, because they do not understand the situation and may consult no one, the importance of stressing the separation of these departments becomes apparent.

For example, let us consider toxicological examinations. The toxicologist of the New York office, Dr. Gettler, has analyzed over 30,000 human bodies. This enormous quantity of work and its character and originality could never have been accomplished in any police laboratory, but only in laboratories connected with large medical centers and a university. It has stamped Gettler as the outstanding toxicologist of the world.

There are hundreds of chemists who can test for arsenic, strychnine, etc., in solutions, but to isolate 1/50th of a grain of strychnine from a mash of liver, kidneys, brain, etc., without losing it, or a drop of alcohol or chloroform from the brain, requires special knowledge, special technique, and constant research, which includes animal experimentation.

Furthermore, the microscopic interpretation of lesions in the various organs, bacterial problems in food poisoning, etc., and serological and immunological procedures can be more safely performed in institutions connected with large hospitals and medical schools, where the investigator must be in constant touch with advances in medicine and has the facilities to do individual research work.

Apprehension The second question to be answered is "Who caused Death?" This is chiefly a matter of apprehension and is entirely the problem of the Police and the Courts.

This work, particularly in the solution of murder, involves the employment of the homicide squads, police photography at the seat of the crime and of the position of the body, etc., fingerprints, mouldages, problems in ballistics, the work of the identification bureaus, etc., as well as the preparation of the case for indictment and trial.

Most of this work could never be done in the medical laboratories and is entirely a matter for the police.

However, this separation of Crime and Medical Examiner's Departments does not imply that all these laboratories should

Essex County would result in an institute of legal medicine that could serve the entire State as effectively as it serves its present local community

Of course, it is obvious that forensic medicine can never be properly taught in this country until a few medicolegal institutes are organized. In the formation of such an institute it must be remembered that it is necessary to amalgamate an already existing legalized authority whose primary and only function is the detection of crime, and a teaching staff of a university. Any educational program for the training of personnel, teaching of graduates and undergraduates, and research work in purely surgical or medical problems made available by these institutes must always remain a secondary function and must not be allowed to inter-

fere in any way with its legal public function

The hope is that by education a demand may be created for men trained as medical examiners and toxicologists, so that communities needing such experts will select them in a manner somewhat similar to that in which they now select health officers

In asking for financial aid and other support for such undertakings we are always confronted with the question "Is there a demand for such instruction?" It is true that there has been no actual demand, but twenty-five years ago there was no demand for a health officer—the demand had to be created. The training of experts in forensic medicine is now at the same stage as the training of health officers was over twenty-five years ago

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In the preparation of this article the author has quoted parts of the Ninth Ludvig Hektoen Lecture on Recent Progress in the Medicolegal Field in the United States given by him Feb. 24 1933

FROZEN MOTHER'S MILK

For the first time it is possible to freeze and keep mothers' milk for several months, transport it, and feed it to prematurely born or ill babies without the necessity of any subsequent action other than thawing and warming

The process, invented by Washington Platt, a scientist in the Syracuse research laboratory of the Borden Company, and worked out in conjunction with Dr Paul W. Emerson of Boston, was demonstrated on July 24 by the Mothers Milk Bureau of the Children's Welfare Federation of 325 East 38th street, New York City

Dr Shirley W. Wynne, president of the Federation, presided at the informal ceremony with doctors and pediatricians as interested spectators. The process has been licensed to the Federation without charge by the Borden Company

According to the staff of the Mothers Milk Bureau of the Federation the new process should make it possible for them to meet any demand that is made upon them. The bureau, which is largest of its kind in the country, furnished mothers' milk to 370 individual babies during 1935, in addition to the distribution of a considerable amount by hospitals to babies in wards

MEDICAL RADIO BROADCASTS

The Medical Information Bureau of the New York Academy of Medicine announces the following broadcasts from Station WABC and the Columbia Broadcasting System network

Thursday, Sept 3, 1 30 P.M.—*Speaker* Dr Jacob Buckstein, Attending Physician

at Bellevue Hospital. *Subject* "Facts and Fads About Foods"

Thursday, Sept. 10, 1 30 P.M.—*Speaker* Dr William J. Hoffman, Director of Tumor Clinic, Queens General Hospital, New York City. *Subject* "Cancer Facts and Fallacies"

essential functions in county governments are indispensable

Teaching of Forensic Medicine and Training of Personnel

Until recently the teaching of legal medicine in this country was limited to a few lectures to undergraduates in the medical schools, and has usually consisted of a superficial discussion of the social and legal relations of the physician. Apparently the subject was mainly being covered so that the students might pass some of the State Boards of Medical Examiners. As a rule, they were not even informed as to what constituted a coroner's or medical examiner's case.

Legal medicine as it relates to the needs of law and justice has not been taught in this country, neither in the medical or the law schools.

The first endowed chair of legal medicine in this country was created early in 1932 when Dr. George B. Magrath (for many years a medical examiner of Suffolk County—Boston) was appointed to the professorship of legal medicine in the Medical School of Harvard University. This was soon followed by the endowment of a medicolegal library at the same university.

Department of Forensic Medicine, New York University. In January 1933, a Department of Forensic Medicine was established at New York University College of Medicine with Dr. Charles Norris, Chief Medical Examiner of New York City, as professor of forensic medicine. Dr. Norris brought together a staff consisting of his associates at Bellevue, the toxicologist Gettler, and the medical examiner of Essex County.

The following courses were outlined and have been given with considerable success:

Undergraduate Instruction in Forensic Medicine. A compulsory course of six lectures to all fourth year students detailing the legalized authorities for the investigation of violent, suspicious and sudden death, the type of case reportable, the signs of death, identification, scientific detection of crime, violent deaths from asphyxia, infanticide, abortion, rape, etc., sudden deaths from natural causes, deaths from poisoning, medicolegal jurisprudence, court proceedings, ordinary and expert testimony, indus-

trial hazards and diseases, compensation courts, etc.

An elective course of twenty-five lectures consisting of a more detailed instruction in subjects covered in the six general lectures, and an elective course in medicolegal pathology, given to a limited number of fourth year students in the office of the Chief Medical Examiner of New York City. In this latter course the student observes and assists at autopsies, etc.

Graduate Teaching in Forensic Medicine

A laboratory course in toxicology, ten hours a week, and two lectures per week for one to three years as a portion of the work in chemistry leading to a Ph.D. in Chemistry, given by toxicologist Gettler.

Practical work in the office of the Chief Medical Examiner of New York City, in witnessing and assisting at autopsies, preparation and diagnosis of microscopic sections, performance of various blood tests, semen examination, etc., necessary in the practice of forensic medicine. This course requires attendance six days a week for six months to three years, and leads in some cases to a degree of doctor of medical science.

Establishment of Medicolegal Institutes

Although it is doubtful whether in our system of government it will ever be possible to organize institutes of legal medicine as they have been developed abroad, still it is possible and to be hoped that in a few communities having well-developed medical examiners' systems such institutes may be started.

Schultz¹⁷ states that

The office of chief medical examiner of New York City, with the great volume and variety of work that it must undertake, could easily become one of the outstanding agencies of its kind in the world. Everything, except the necessary financial support, is at hand for efficient public service, for the training of experts in legal medicine for service in other parts of the country, and for the development of medicolegal science through practical application, research, and investigation.

In the same report, Schultz also states

The office of chief medical examiner of Essex County takes rank with that of chief medical examiner of New York City as one of the two outstanding agencies of its kind in the country. It should be easy for intelligent citizens of New Jersey to convince themselves that expansion and development of the office of chief medical examiner of

process and the tympanic cavity One must be able to demonstrate

1 The entire inner bony table forming the floor of the middle fossa consisting of the tegmen tympani, tegmen antri, and tegmen mastoidei

2 The entire inner bony table covering the sigmoid sinus throughout its course within the mastoid process

3 The inner bony table forming the anterior perisinus aspect of the posterior fossa (Trautmann's Triangle)

4 The inner bony table forming the posterior perisinus aspect of the posterior fossa

5 The floor of the antrum and aditus

6 The eminence of the external semi-circular canal

7 The remaining lower limit of the tympanic portion of the posterior bony wall of the external auditory canal enclosing the descending portion of the facial nerve within the Fallopian canal, commonly known as the facial ridge

8 The transverse tympanic portion of the facial nerve in its bony canal

9 The oval window with stapes intact.

10 The promontory

11 The semi-canal for the tensor tympani muscle

12 The tympanic orifice of the Eustachian tube.

II Exposure and Inspection of Basal Labyrinthine Portion of Petrous Pyramid

1 In a pneumatic mastoid process the mastoid aspect of the base of the petrous portion of the temporal bone, which fuses with the inner bony table of the mastoid process superiorly, posteriorly, and inferiorly and the anterior and outermost limit of which is marked by the eminence of the external semi-circular canal, most often is composed of perilabyrinthine groups of cells These perilabyrinthine cells in the regions inferior, superior, and posterior to the mastoid aspect of the base of the petrous pyramid plus the cells in the solid angle are removed until the mastoid aspect of the petrous base with the external, posterior, and superior semi-circular canals are sharply defined

2 *The severance of the petrosal base from the mastoid process* This is accomplished by removing the inner bony table of the mastoid process covering the sigmoid sinus throughout its course, also, removing the entire inner bony table

which forms the roof of the mastoido-tympanic cavity and exposing the dura of the middle fossa which covers the temporal lobe The inner bony table which occupies a position supero-anterior to the sinus in Trautmann's Triangle and infero-anterior to the sigmoid sinus between it and the facial ridge up to the base of the petrous is also removed thus exposing the dura of the posterior fossa

3 *Inspection of the basal labyrinthine portion of the pars petrosa* By gently separating the dura in the posterior fossa from the posterior surface of the petrous base, the basal labyrinthine portion lying internal and anterior to the posterior semi-circular canal is examined for pathologic changes The dura of the middle fossa is gently elevated from the superior surface of the basal labyrinthine portion,

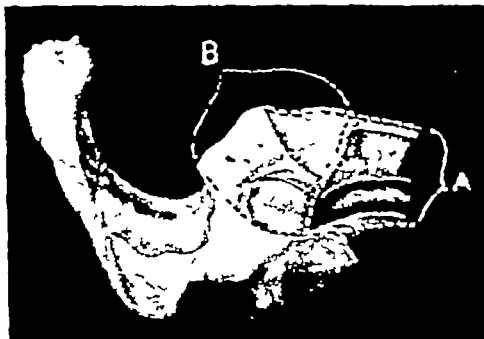


Fig 1 Anterior view of petrous pyramid Apicectomy completed A—Apical carotid portion of petrous pyramid (postoperative) B—Basal labyrinthine portion of petrous pyramid

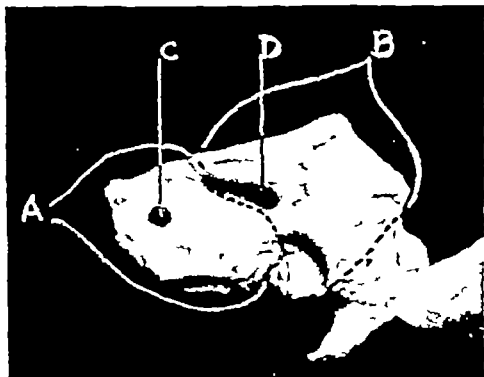


Fig 2 Posterior view of petrous pyramid A—Posterior wall of apical carotid portion. B—Posterior surface of basal labyrinthine portion. C—Cortical perforation in posterior wall of apical carotid portion D—Internal auditory meatus

COMPLETE APICECTOMY

Preliminary Report of a New Technic

JULIUS LEMPERT, M D, *New York City*

A Technic for Complete Apicectomy

Petrositis, as a clinical and pathological entity, has been accorded a recognized place in otology. Within recent years, refinements in methods of diagnosis and therapeutic indications have appeared in the literature. This paper, being a preliminary report of a new operative procedure, will not concern itself with a discussion of these phases of the subject (Fig 1 and 2).

In one type of petrositis, wherein the apical carotid portion of the pyramid is involved, several specialized technics have been advocated for the drainage of the suppurative focus. Briefly, they are those described by Eagleton, Almour, Frenkner, and Ramadier. The advantages and disadvantages of these technics were thoroughly discussed in a symposium, before the American Otological Society, Toronto, May 28, 1935. I desire to go further with a critique of these procedures.

Most of these procedures permit an evacuation of accumulated pus but none of these operative measures permit of an adequate exenteration of the pathology within the apical carotid portion of the petrous pyramid, none afford a means of approach for drainage of an epidural abscess unless, haphazardly it spreads into the operative field, particularly when an abscess is located in the posterior fossa, anterior or internal to the internal auditory meatus which has resulted from a rupture through the posterior wall of the apical carotid part of the pars petrosa. Furthermore, none of these procedures give the operator a full view of the entire interior of the petrous apical carotid portion.

While Ramadier's operation is essentially correct as far as the principle of surgical drainage of the contents of the apical carotid portion is concerned, it defeats its purpose because drainage is afforded through an opening in the *internal wall* of the carotid canal, which opening becomes automatically obstructed when the carotid artery is allowed to fall back *in situ*.

The majority of otologists are in accord with the fact that where an empyema of the apical carotid portion is present, and, in the absence of an involvement of its confining walls simple drainage through puncture, as performed by Kopetzky and Almour is generally sufficient. This surgical principle presents itself in empyema of the pleural cavity also, but, nevertheless there are many instances of pleural empyemata which require extensive rib resection and surgery to the pus cavity proper. The latter cases do not heal by simple thoracotomy.

The operative technic which is herein after described is indicated in all cases of apicitis and its complications wherein it is necessary to perform an apicectomy instead of an apicotomy. In a paper soon to be published, these indications will be discussed in detail.

The surgical technic of an apicectomy may be divided into the following stages:

I The performance of a mastoido-tympanectomy

II The exposure and inspection of the basal labyrinthine portion of the petrous pyramid

III The creation of a surgical intrapetrosal approach to the apical carotid portion of the petrous pyramid

IV The exploration, inspection, and exenteration of the apical carotid portion of the petrous pyramid

I Performance of a Mastoido-Tympanectomy (Radical mastoidectomy)

The performance of a mastoido-tympanectomy is essential to all surgery of the apical carotid portion whether apicotomy or apicectomy. It must be understood that extrapetrosal surgery is neither feasible nor practical because exposure of the apical carotid portion of the petrous pyramid through this route cannot be accomplished in the living without lacerating the dura. The technic employed in a mastoido-tympanectomy is well-known and needs no description. It will suffice to state that the end result of the mastoido-tympanectomy must consist of a complete exploration of the entire surgical anatomy within the mastoid

2 Bring the tympanic orifice of the Eustachian tube into full view

The entire posterior root of the zygoma, which enters into the formation of the outer part of the supero-anterior wall of the external auditory canal, is removed with an electrically driven round burr, or with hammer and chisel. The remainder of the tegmen tympani is removed by lifting it with a curette until the mouth of the Eustachian tube and the semi-canal for the tensor tympani muscle are fully exposed.

The orifice of the semi-canal for the tensor tympani muscle, and the tympanic orifice of the Eustachian tube are both situated at the upper part of the anterior wall of the tympanic cavity and are separated from each other by a thin horizontal plate of bone, known as the *septum canalis musculotubaris*. The semi-canal for the tensor tympani lies beneath the tegmen tympani and superior to the Eustachian tube orifice.

3 Remove the lower border of the squama

Approximately a one-half inch area of the lower border of the squama is removed, beginning anteriorly above the posterior end of the zygoma proper and ending with the posterior limit of the lower border of the squama. This step in the procedure permits a certain amount of retraction of the temporal lobe which affords added space for instrumentation during the surgical intervention within the apical carotid portion of the pars petrosa.

4 Remove the Peri-Eustachian tube cells

The peri-Eustachian tube cells are exenterated, and the mouth of the Eustachian tube is widened by the destruction of the *septum canalis musculotubaris*.

5 Destroy the semi-canal for the Tensor Tympani muscle and remove the muscle

6 Expose the tympanic, ascending vertical portion of the internal carotid canal

With a subperiosteal elevator inserted anterior to the outer edge of the bony anterior wall of the external auditory canal, and hugging its anterior, or mandibular surface, the soft tissues lying adjacent, internal, and anterior to it are gradually and progressively separated and displaced anteriorly toward the mandible. As one carries out the separation, one simultaneously and gradually removes piecemeal (with the aid of a narrow curved Rongeur and the electrically driven round burr) the entire tympanic bony part of the anterior wall of the external auditory canal, plus part of the postglenoid process (which enters into its formation above and anteriorly), the entire anterior and inferior parts of the annulus tympanicus, and as much of the tympanic bony wall of the posterior non-articular part of the mandibular

fossa as is required to reach the petro-tympanic fissure. With the insertion now of a narrow, deep-reaching blunt retractor and the displacement of the soft tissues anteriorly toward the mandible, approximately one-half inch of additional surgical space is gained, thus bringing the apical carotid portion still closer to the operator. Owing to the anatomic fact that the posterior half of the mandibular fossa is not concerned with articulation and that this posterior part of the glenoid fossa is filled with soft tissue and sometimes by a portion of the parotid gland, and, that these tissues are easily compressible, this step in the surgical technic of apicectomy is accomplished with ease, giving the surgeon additional freedom of action. (Fig 5, 6)

At the completion of this step in the technic we have exposed to direct view and within reach for instrumentation, and for further surgical intervention, the entire tympanic, ascending vertical portion of the internal carotid artery lying in its bony canal, anterior and internal to the promontory. The carotid canal is the most important anatomic structure which has to be exposed in the performance of an intrapetrosal apicectomy (Fig 7)

IV Exploration, Inspection, and Exenteration of Apical Carotid Portion of Petrous Pyramid

Before describing this step it is necessary to call attention to the anatomic position and the course of the internal carotid artery in its canal, in its relation to the petrous portion of the temporal bone. The internal carotid artery in its course through the apical carotid portion of the petrous pyramid is enclosed in a bony canal. This canal has an external and an internal orifice. The external orifice, which is the beginning of the carotid canal through which the internal carotid artery enters the petrous portion of the temporal bone, is located on the inferior surface of the apical carotid portion of the petrous bone, while the internal or anterior orifice of the carotid canal is in the very apex of the apical carotid portion. The petrous geometric apex is received into the angular interval between the posterior border of the great wing of the sphenoid and the basilar part of the occipital (Fig 8)

The carotid canal runs along the entire antero-superior wall of the apical carotid portion of the petrous pyramid. At first it ascends vertically and then bends a short distance anteriorly and internal to

and a search for pathologic changes is made internal and anterior to the eminentia arcuata. The anterior or tympanic wall of the basal labyrinthine portion of the petrous pyramid is searched for a supra- or infra-cochlear fistula.

III Creation of an Approach to Apical Carotid Portion of Petrous Pyramid

In order to create a practical, adequate surgical field of approach to the apical

at the junction of the inferior and anterior canal walls. Returning to the starting point, the incision is carried through skin and periosteum down to the squama, upward and outward into the triangular non-cartilaginous space between the tragus and helix, hugging the anterior wall of the helix for a distance of about three-quarters of an inch. Retractors are then introduced into this latter portion of the incision and the auricle is retracted backward over the mastoid region. Such a posterior displacement of the auricle permits of a surgical approach to the apical carotid portion of the petrous pyramid, and reduces to a minimum the distance existing between the apical carotid

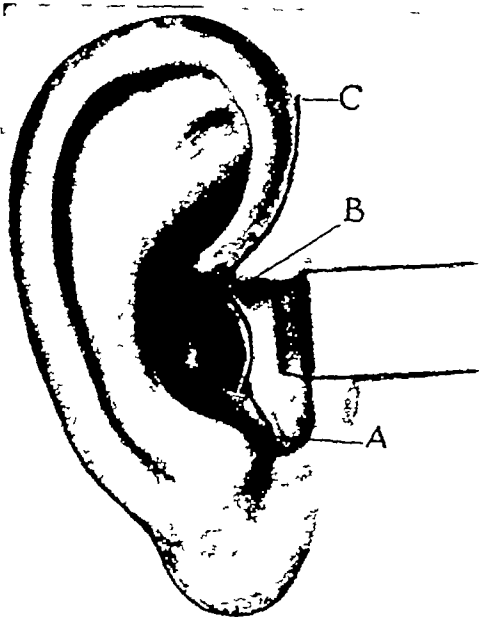


Fig 3. Supplementary incision for apicectomy. A—B—Incision in anterior wall of external auditory canal. B—C—Incision over squamous portion of temporal bone.

carotid portion of the petrous pyramid, one that will be spacious enough to permit free instrumentation and surgical manipulation under direct vision aided by proper illumination, one must do the following:

- 1 Supplement the already existing soft part incision in order to bring into full view from above downward, and within out-view the anterior bony wall of the external auditory canal.

- a An initial incision is made in the uppermost part of the anterior wall of the external auditory canal, where its cartilaginous portion is attached to its bony part and is then carried forward, along the entire line of attachment until it emerges from the external auditory canal

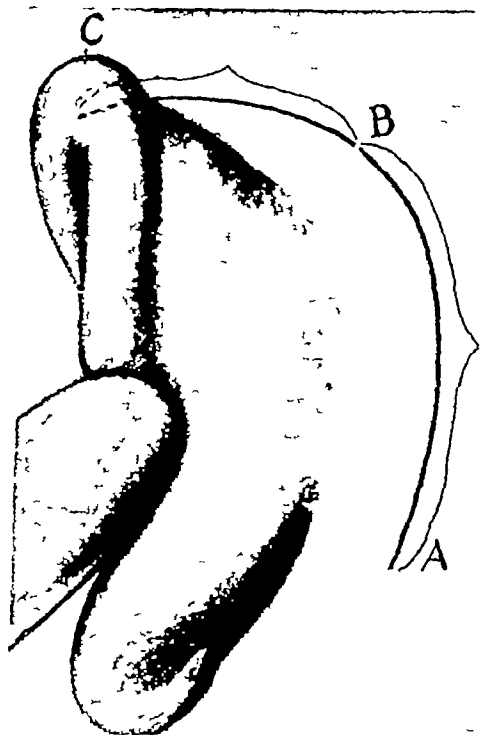


Fig 4. Supplementary incision for apicectomy. A—B—Already existing postauricular incision. B—C—Extension of postauricular incision over squamous portion of temporal bone.

portion and the outermost edge of the wound (Fig 3).

- b The technic to be described can also be carried out through the previous postauricular incision by extending it forward and upward along the squama. The anterior membrano-cartilaginous canal wall is then separated from the bony canal, and drawn forward with the auricle. The disadvantage here is that approximately one-half inch of soft tissue, plus the tubular membrano-cartilaginous canal is added to the distance normally existing between the outer surface of the skin and the apical carotid portion of the petrous pyramid (Fig 4).

successfully every part of the apical carotid portion of the petrous pyramid, and, the best means to avoid injury to the internal carotid artery. In my experience the peri-carotid plexus of veins, described by anatomists, was never encountered during the process of removal of the external bony wall of the internal carotid canal. The exposure of the internal carotid artery is not attended by bleeding

portion of the petrous pyramid. At this point begins the surgical antero-superior middle fossa surface of the apical carotid portion.

The antero-superior wall of the apical carotid portion above the horizontal course of the carotid canal from its bend forward to the very tip, slopes upward and backward forming a triangulation with the posterior wall, thus creating a

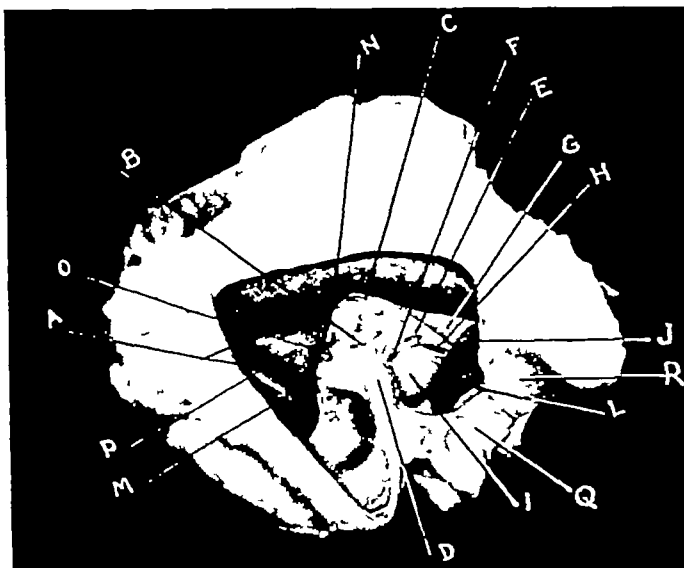


Fig 9 Operating table view of completed apicectomy. A—Mastoid aspect of basal labyrinthine portion of petrous pyramid. B—External semi-circular canal. C—Superior semi-circular canal. D—Facial ridge with descending portion of facial nerve. E—Transverse tympanic portion of facial nerve. F—Oval window with stapes intact. G—Superior wall of basal labyrinthine portion. H—Semi-canal for tensor tympani muscle. I—Promontory. J—Posterior fossa bony wall forming the inner table of the completely exenterated apical carotid portion. L—Exposed petrous apical course of the internal carotid artery. M—Sigmoid sinus. N—Middle fossa dura. O—Posterior semi-circular canal. P—Posterior fossa dura. Q—Posterior or non-articular part of mandibular fossa. R—Anterior articular part of mandibular fossa. (Semi-circular canals remain unopened at operation.)

We remove the outer bony wall of the carotid canal with a sharp curette, beginning with the ascending tympanic end, and expose the artery throughout its vertical course up to its bend. The bony plate forming the outer or external wall of the carotid canal in this region is very thin and very often deluscent in parts. The bony plate is gently and gradually lifted, with the cup of the curette directed away from the arterial wall, until the canal curves forward and medialward to begin its horizontal course along the antero-superior wall of the apical carotid

tent-like space, with the inferior surface of the apical carotid portion as its base. It is in this triangular tent-like space that the cellular structure is to be found lying partly superior to and mostly posterior to the horizontal portion of the carotid canal. The cell exenteration of this space within the apical carotid portion of the petrous pyramid is begun at a point where the tympanic ascending portion of the carotid artery bends, and begins its horizontal apical course forward and medialward. With a small, sharp curette, with the edge of the cup directed away from the

the promontory, this part of the carotid canal is known as the ascending vertical portion. At the termination of its vertical course the carotid canal curves forward and medialward, and runs along the entire length of the antero-superior wall of the apical carotid portion of the petrous

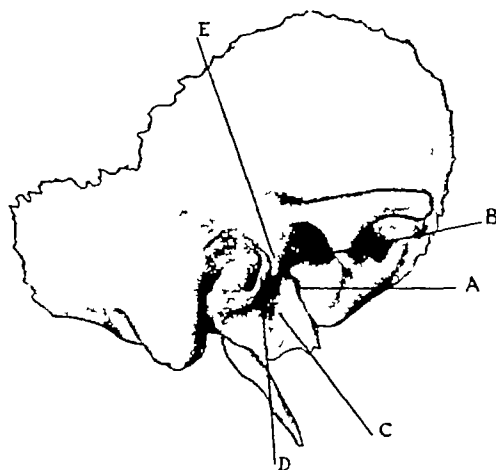


Fig 5 Mandibular fossa A—Petro-tympanic fissure. B—Anterior part of mandibular fossa C—Posterior part of mandibular fossa D—Anterior bony tympanic wall of the external auditory meatus E—Post-glenoid process

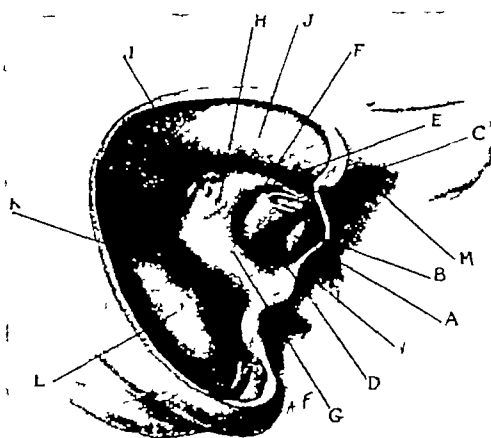


Fig 7 Exposed tympanic ascending vertical portion of internal carotid canal A—Internal carotid canal tympanic portion B—Tympanic orifice of Eustachian tube. C—Semi-canal for tensor tympani. D—Promontory E—Transverse tympanic portion of facial nerve. F—Oval window with stapes intact. G—Facial ridge with descending portion of facial nerve. H—External semi-circular canal I—Solid angle. J—Middle fossa dura K—Posterior fossa dura L—Sigmoid sinus M—Anterior articular part of mandibular fossa N—Non-articular part of mandibular fossa

pyramid When the internal carotid artery leaves the carotid canal through its internal orifice to enter the cavity of the skull, between the lingula and petrosal process of the sphenoid, it again ascends

This course of the internal carotid artery through the apical carotid portion is of great importance and assistance in the performance of an apicectomy *A complete exposure of the internal carotid artery and its employment as a guide is the only way to reach and exenterate*



Fig 6 Existing surgical space between non-articular posterior part of the mandibular fossa and the mandible A—Space between mandible and tympanic bony anterior canal wall resulting from the anatomic displacement backward of the non-articular part of the mandibular fossa B—Non-articular part of mandibular fossa C—Petro-tympanic fissure

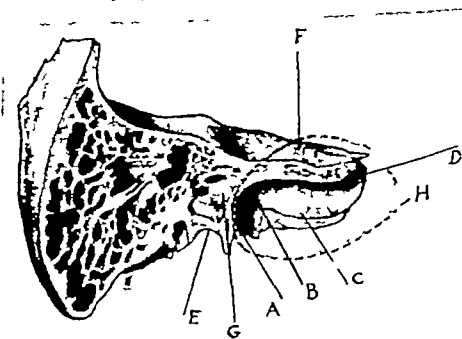


Fig 8 Course of carotid canal within the apical portion of the petrous pyramid A—External opening of internal carotid canal B—Ascending tympanic vertical portion of carotid canal C—Transverse portion of carotid canal D—Internal opening of carotid canal E—Jugular fossa. F—Tent-like antero-superior surface of apical portion. G—Promontory H—Apical carotid portion of Petrous Pyramid

apical carotid portion, which is formed by the base of the skull, is also inspected, and if diseased surgically treated

By deliberately opening the carotid canal and exposing the artery throughout its petrous course an existing pericarotid collection of pus is readily drained. In an apicectomy for acute bacterial meningitis an approach for surgical drainage of the cisterna pontis and cisterna interpeduncularis is provided (Fig 9, 10, 11, 12)

Conclusions

1 A new technic is described for the surgical treatment of apicitis and its complications

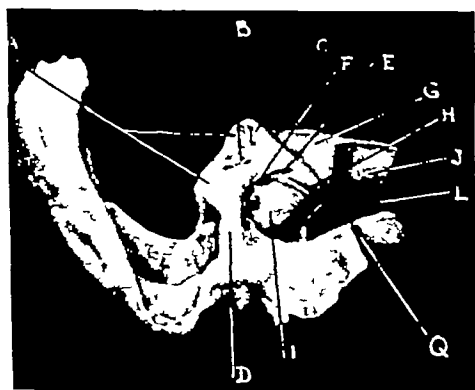


Fig 11 *Apicectomy completed* A—Mastoid aspect of basal labyrinthine portion of petrous pyramid. B—External semi-circular canal C—Superior semi-circular canal D—Facial ridge with descending portion of facial nerve. E—Transverse tympanic portion of facial nerve. F—Oval window with stapes intact. G—Superior surface of basal labyrinthine portion H—Semi-canal for tensor tympani muscle. I—Promontory J—Posterior fossa bony wall forming the inner table of the completely exenterated apical carotid portion L—Exposed petrous apical course of the internal carotid artery Q—Eustachian tube (Semi-circular canals remain unopened at operation)

2 It presents the following advantages

A It permits a thorough removal of all disease within the entire apical carotid portion of the petrous pyramid

B It permits a thorough inspection of the posterior surface of the apical carotid portion of the pars petrosa, which heretofore has been impossible.

C It permits inspection of the entire dura of the middle cranial fossa in apposition with the antero-superior petrosal surface without danger of trauma to the dura proper

D Through the exposure afforded by this technic, an epidural abscess in the posterior fossa internal to the internal auditory meatus can be adequately drained, which has presented great difficulties heretofore.

E A collection of pus which has ruptured through the inferior surface of the apical carotid portion can also be drained. The inner table of the inferior surface can be inspected and surgically treated

F It will expose and drain a pericarotid collection of pus within the carotid canal

3 The exposure of the internal carotid artery throughout its entire course in the bony canal is to be viewed as an advantage in guiding one safely through the entire apical carotid portion of the petrous

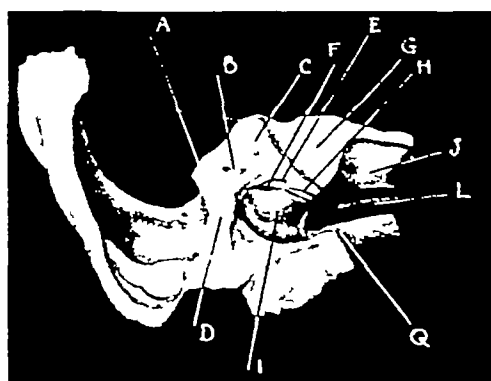


Fig 12 *Apicectomy completed* A—Mastoid aspect of basal labyrinthine portion of petrous pyramid B—External semi-circular canal C—Superior semi-circular canal D—Facial ridge for descending portion of facial nerve E—Transverse tympanic portion of facial nerve. F—Oval window with stapes intact. G—Superior surface of basal labyrinthine portion H—Semi-canal for tensor tympani muscle I—Promontory J—Posterior fossa bony wall forming the inner table of the completely exenterated apical carotid portion L—Exposed petrous apical course of the internal carotid artery Q—Eustachian tube. (Semi-circular canals remain unopened at operation)

pyramid. The internal carotid, because of its unvarying course, is a great natural landmark which leads from the end of the basal labyrinthine portion through the entire apical carotid portion directly to the very geometric apex of the petrous pyramid, and keeps one constantly in the safety zone. It is, therefore, almost impossible to injure it

4 The facial nerve and the promontory are never in danger of injury during an apicectomy, because they both occupy an

carotid artery, we slowly continue the exposure of the carotid and continue the removal of the outer carotid canal wall one mm spicule at a time, and follow each mm of bony canal wall with one mm of cell removal, by curetting supero-posteriorly to the upper edge of the inner wall of the carotid canal. *Taking advantage of the fact that the internal carotid artery in its never varying course through the petrous portion of the tem-*

carotid portion All the apical cellular structure with all its pathologic findings is thus exenterated

In the process of curetting the apical cellular area we progressively remove the cortex of the entire antero-superior middle fossa wall of the apical carotid portion away from the dura covering the temporal lobe, with a curette and a fine-pointed Rongeur. By this process of progressively lifting and removing minute portions of

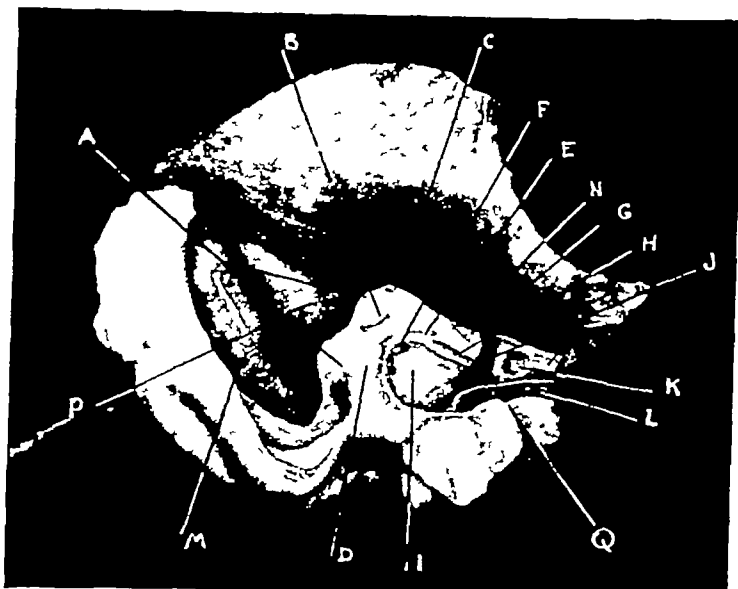


Fig 10 *Apicectomy completed* A—Mastoid aspect of basal labyrinthine portion of petrous pyramid B—External semi-circular canal C—Superior semi-circular canal D—Facial ridge with descending portion of facial nerve. E—Transverse tympanic portion of facial nerve. F—Oval window with stapes intact G—Superior bony middle fossa surface of the basal labyrinthine portion H—Semi-canal for tensor tympani muscle I—Promontory J—Posterior fossa bony wall forming the inner table of the completely exenterated apical carotid portion. K—Cortical perforation in posterior fossa bony wall of the apical carotid portion. L—Exposed petrous apical course of the internal carotid artery M—Sigmoid sinus N—Middle fossa dura P—Posterior fossa dura Q—Eustachian tube (Semi-circular canals remain unopened at operation)

poral bone marks the beginning and end of the apical carotid portion of the pars petrosa, we perform a complete apicectomy by exposing and following the artery. We follow its course through the apical portion by progressively lifting small portions of the outer bony carotid canal wall and alternately exenterating the cellular structure directly superior and posterior to the course of the artery until the entire apical portion of the carotid artery is exposed up to its upward bend where it makes its exit from the very apex of the apical

cortex away from the dura we avoid injury to the dura. The temporal lobe is then gradually retracted thus enlarging the field and facilitating surgical instrumentation. The inner table of the apical carotid portion (which is formed by the bony posterior fossa wall of the apical carotid portion lying internal to the internal auditory meatus) is now inspected for the presence of a fistula. This wall if necrotic, is curetted gently and lifted away piecemeal from the posterior fossa dura and if necessary entirely removed.

The inner bony table of the floor of the

CLINICAL SPECTROSCOPY

Psoriasis Becoming Pustular and Eczematous Following Ingestion of Mineral Oil

L. EDWARD GAUL, M.D., *New York City*

From the New York Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital, Columbia University

About twenty-five years ago liquid petrolatum entered the array of popularly prescribed laxative agents. Von Zumbusch¹ at about the same time reported several cases of psoriasis with associated recurrent pustular exanthem. Case reports of pustular psoriasis have become quite common especially during the past seven years. The etiology of the concurrent pustules in psoriasis remains as much an enigma as etiology of psoriasis.

Mineral oil as a laxative had special virtues. The action was mild, non-irritating with a softening effect on the intestinal contents. It was a solvent for certain toxins, preventing their absorption, and was eliminated unchanged by the feces. These properties combined with the clinical effectiveness of liquid petrolatum and its various fortified preparations were widely proclaimed which accounts for the existing pre-eminence of this drug as a remedy for constipation. In a recent issue of the *Journal of the Amer Med Assn*, a reply in *Queries and Minor Notes*² stated:

Liquid petrolatum is probably the least objectionable of all laxatives in cases in which it is indicated. Even when it is taken in tablespoon doses three or four times daily, it may produce no harmful effects in patients with spastic colon, ulcerative colitis or diverticulosis.

The dosage seems to be irrelevant. There are no references to any possible deleterious effects from the continued or habitual use of this drug except a possible sluggishness of the bowel from lack of exercise in propelling well-formed fecal matter. The unquestionable acceptance by physicians of mineral oil therapy for constipation was based on the fact that it was inert in the intestinal canal and non-absorbable. The latter was taken for granted from very flimsy data.

Channon³ in 1929 was able to isolate liquid petrolatum (2 gm) in a nearly pure state from the livers of pigs and similarly from the livers of rats, and he has shown

that its absorption lowers the iodine value of the liver fat. This effect alone must induce eventually either local or remote metabolic changes in the body. Whether or not any absorption of mineral oil takes place through the lymphatic system, thereby immediately reaching the blood stream, has not been established, but it has been rather conclusively shown that the lymphatic system is the principal avenue of absorption for animal or vegetable fats and oils. The results of Channon were later confirmed by Twort^{4,5} who demonstrated further that following the ingestion of mineral oil, the livers, and next in frequency, the adrenals of rabbits, rats, and mice showed a fatty infiltration. Here then is concrete evidence of pathology. His work would indicate that the hydrocarbon had reached the blood stream with resulting generalized distribution to all organs.

Apropos to these experimental data, Dunley-Owen⁶ observed a group of thirty-four patients, all of whom were females between the ages of thirty and forty-five who had been "constant drinkers" of liquid petrolatum for the past three or four years. They complained of a gradual loss of weight, pallor, anorexia, lassitude and weariness. Upon discontinuing the medication there was a rather prompt amelioration of symptoms. He is of the opinion that liquid petrolatum causes the whole of the mucous membrane of the gastrointestinal tract to become so coated with paraffin that the normal flow of the gastric and intestinal secretions cannot take place, and also that such food as was digested could not be absorbed. A similar observation was made by Till⁷ in a group of young children in whom he attributed the loss of weight to the same substance.

A still greater incrimination of mineral oil therapy has been brought to attention recently. In 1927, Dutcher⁸ reported that mineral oil may act as a solvent for vitamin A, thereby depleting the ingested food of their supply of this vitamin. These

anatomic position posterior to the field of surgical instrumentation

5 By reason of the fact that the entire apical carotid portion of the petrous pyramid harbors the internal carotid artery as the only anatomically and surgically important landmark, it is therefore suggested that that part of the petrous pyramid be named the "Apical carotid portion." By the same reasoning it is also suggested that the basal portion of the petrous pyramid, for easier surgical orientation, be named the "Basal labyrinthine portion." Such a description would perhaps tend to clarify the existing confusion with regards to the surgical anatomy

6 In all cases of otitic bacterial leptomeningitis, wherein all possible foci within the temporal bone should be removed, this procedure is suggested for the exploration of a possible hidden focus

within the apical carotid portion, or in the regions surrounding it, which may be the inciting cause of the meningeal infection

7 This procedure has been performed successfully on living subjects. This technic was carried out in four cases of suppurative apicitis and five cases of otitic bacterial meningitis

8 This procedure opens the way to surgical drainage of the cisterna interpeduncularis (supratentorial), and the cisterna pontis (infratentorial) in the treatment of acute bacterial suppurative meningitis

9 The surgical treatment of thrombosis of the inferior petrosal sinus may be attempted through this route.

10 An apicectomy can be carried out when necessary in any type of petrous pyramid, pneumatic diploic or sclerotic.

119 E. 74 St

PROFESSIONAL MEMBERSHIP IN NEW YORK HEART ASSOCIATION INVITED

The New York Tuberculosis and Health Association has just made possible professional membership in its Heart Committee, the New York Heart Association. Physicians in any of the five boroughs, interested in heart diseases, are invited to join.

The New York Heart Association was formed to bring together, in cooperative effort, physicians and laymen interested in the medical, social, and economic aspects of heart diseases, for the purpose of making available to cardiac patients the best that medical knowledge and a sound public health organization have to offer.

The activities of the New York Heart Association are conducted by subcommittees, including a Committee on Cardiac Clinics, a Criteria Committee, a Committee on Research, a Convalescent Care Commit-

tee, a School Committee, a Program Committee, and an Education Committee.

The New York Heart Association is prepared to extend its activities to serve the medical and social needs of cardiac patients as opportunities are presented.

Dr Ernst P. Boas is Chairman of the New York Heart Association, whose Executive Committee comprises Dr Alfred E. Cohn, Dr J. Hamilton Crawford, Dr Arthur C. DeGraff, Dr Robert H. Halsey, Dr Robert L. Levy, Dr Arthur M. Master, Dr Edwin P. Maynard, Jr., Dr Currier McEwen, Dr Harold E. B. Pardee and Dr Homer Fordyce Swift. Mr Harry P. Davison, Treasurer, New York Tuberculosis and Health Association, will receive dues, which are \$2.00 a year, at 386 Fourth Avenue, New York City.

"THREE CENTS-A-DAY" MEDICAL ADVISERS

A group of physicians representing various branches of medicine has been appointed by the board of directors of the Associated Hospital Service, through Dr Walter T. Dannreuther, to serve in an advisory capacity, particularly regarding the eligibility of subscribers to services under the hospital plan. Dr Dannreuther is the official representative of the Co-ordinating Council of the Five County Medical Societies on the board of the three-cents-a-day plan for hospital care.

The physicians who have agreed to serve

as expert advisers to the Associated Hospital Service are

Dr Conrad Berens, ophthalmology, Dr George W. Kosmak, obstetrics, Dr Adolph G. De Sanctis, pediatrics, Dr Matthew Shapiro, internal medicine, Dr Clarence G. Bandler, urology, Dr George A. Blakeslee, neurology, Dr Samuel J. Kopetzky, otolaryngology, Dr Edward J. Davin, gynecology, Dr William Hadden Irish, orthopedics, Dr R. Franklin Carter, surgery, Dr A. Benson Cannon, dermatology, and Dr William H. Stewart, radiology.

and soles. Associated with the appearance of new lesions, there was a central exudation of a milky, viscous, and sticky fluid which elevated the scales, and subsequently oozed out around the periphery of the lesion. The legs, umbilicus, and right ear showed an inflammatory edema with a profuse exudation. The most striking observation being that the inflammatory reaction was mild compared to the profuseness of the exudation which gave one the impression that something was present in the tissues which it no longer could respond to or retain and was simply running out.

It was necessary to hospitalize this patient again on September 20, because of a general physical debility and an uncontrollable exudation from the legs and umbilicus. The admission temperature was 98.6, respiration twenty, pulse eighty-six, blood pressure 110/70.

state as much as possible. The meats were to be eaten rare. Thyroid was given by mouth supplemented by thyroxin (Roche) injections for the purpose of stimulating metabolism.

During the next three weeks there was little change except that the patient felt better generally, the appetite had become almost ravenous, and things looked brighter all around. The areas of skin not involved took on a lighter hue, a few new lesions appeared, the skin temperature increased with objective signs of stimulation to the sweat and sebaceous glands. After the perspiration began to appear in the axilla, the surrounding inferior area of skin showed inflammatory streaking just as if the initial secretion was so concentrated or altered chemically that it was irritating to the surrounding skin. Within the next few days the older psoriatic lesions began to show a



Fig 1—Biospectrograms* of case. A—shows the relative density of the phosphorus lines indicated above as P_1 and P_2 obtained by burning a known quantity of phosphorus. B—shows the density of the phosphorus line in a biopsy specimen obtained from a lesion on the left leg before treatment. C—shows the density of the phosphorus line in a biopsy specimen obtained from the site of an original lesion on the left shoulder. A period of six weeks elapsed between the first and second biospectrometric analysis. By using a lens, centered over P_1 , first dot, one can observe the lines and the marked difference in density of the lines in B and C which shows that a quantitative excretion of phosphorus has occurred with an involution of the psoriatic lesions.

* The word biospectrogram specifies the spectrogram given by burning a biopsy specimen under standardized physical conditions and obtained with a three sixteenth inch (0.47 cm) dermal punch.

Laboratory data. Urine was negative. The blood hemoglobin was ninety-one per cent, red blood cells 4.26, white blood cells 6,600, adult polymorphonuclears seventy-two, immature polymorphonuclears eight, lymphocytes eighteen, monocytes two. The serology was negative. The urea-nitrogen was nine. The icterus index was seven. The basal metabolism was minus eleven. The urea clearance test was 99.9 per cent and 110.1 per cent. A flat plate of the abdomen showed the liver slightly enlarged and a moderate mid-lumbar scoliosis. The histologic diagnosis was psoriasis with pustules.

The therapy of this case from now on had but one objective, i.e., to affect the high phosphorus retention. The patient was placed on a demineralization food and water regime. This entailed the exclusion of all dairy products and foods containing dairy products, yolk of eggs and food containing egg yolk, and all vegetable oils and hydrogenated fats used as shortenings. A mineral free water and a fat free bread were also advised. As to specific dietary instruction the patient was told to eat fresh vegetables and fruits in the raw

marked diminution of scaling, the central portion lost its induration, the color changed from a deep beefy red shade to a pink, almost fawn-like color. When five weeks had elapsed, all the objective signs of psoriasis had disappeared. A second biospectrometric analysis at this time showed less phosphorus than that found in normal skin (Fig 1-C). While this may seem puzzling, yet if one accepts the psoriatic lesion as an attempt on the part of the tissue to bring about the combustion of metabolites aided in part by exfoliation, obviously this oxidation-reduction process will sufficiently rid the tissues of metabolites to restore a normal tissue, i.e., the adjacent apparently normal skin had not had the advantage of this spring house-cleaning so to speak.

In spite of the fact that the psoriasis had involuted there remained a very low grade inflammation of the legs, umbilicus, and right ear, which continued to excrete this milky fluid in little droplets. It happened that the dressing contacted a paper towel and on discarding it, there was noticed an

findings were in agreement with those of Burrows⁹ who postulated that unabsorbed mineral oil might act as a solvent for vitamin A in the food and in the mucosa of the digestive tract. Jackson¹⁰ reported that the administration of the minimum requirement of butter fat in mineral oil solution results in a considerable restriction of growth with other attendant symptoms of vitamin A deficiency. A later report by Jackson¹¹ states that the separate administration of mineral oil distinctly inhibits the assimilation of the vitamin A factor in yellow corn and opposes the indiscriminate use of mineral oil as a laxative. Mitchell¹² confirmed these results using spinach. Jackson¹³ showed further that mineral oil in the gut may compete with natural fat as a solvent for fat-soluble substances. This obviously has an important bearing relative to the effect of the ingestion of mineral oil on the bodily economy of the fat-soluble vitamins. Dutcher¹⁴ believes that the harmful effect of mineral oil may be explained on the basis of carotin excretion from the body in the unabsorbed mineral oil. This hypothesis is supported by the fact that yellow pigment excretion (when mineral oil is fed) is roughly proportional to the carotin ingested. This is not true when carotin is fed in the absence of mineral oil. Spectrophotometric determinations of carotin in the feces extracts also supports this conclusion. Certainly these observations become more implicating when one reviews the ever-increasing importance of the metabolic role of the various plant pigments. That excretion of pigment takes place in an overdose of mineral oil is supported further by an abundance of clinical evidence. Everyone has observed the yellow color of the excess oil excreted with the feces or eliminated spontaneously

Report of a Case

I F, Jewish, male, aged thirty-four, born in Rumania and came to America two years later. Occupation—fruit vendor. *Family history* mother aged fifty-seven, has had diabetes several years. *Past history* Tonsillectomy at twenty-one years of age, otherwise unimportant except for several years proceeding the onset of the skin eruption there were various digestive disturbances associated with a rather profuse rectal bleeding at sporadic intervals. *Present illness* Eruption appeared eight years ago,

involving the customary sites and also the axilla, groin, and umbilicus. The usual topical remedies combined with fifteen to eighteen Roentgen treatments had controlled the eruption to some extent but it gradually became more generalized appearing on the face, hands, and feet.

On October 8, 1934, this patient visited the clinic and was diagnosed psoriasis and dermatophytosis. He was given a soothing ointment locally and generalized cold quartz treatments, a total of forty-two during the ensuing three months. The internal medication consisted of cod liver oil gelatin capsules, q i d., each capsule containing four c.c. of which about 300 were taken. Mineral oil was also prescribed and he took seven to eight tablespoons daily with bran for a period of three months, or approximately a gallon and a half. During January 1935 the eruption gradually spread and whereas the lesions had always been dry, they were now associated with pustules and varying degrees of exudation. By April, there had developed an acute exfoliating generalized dermatitis and a very profuse exudation of a milky, viscous, and sticky fluid having a rancid odor.

On April 27 the constitutional reaction of the patient necessitated hospitalization. On admission the temperature was 100, pulse 84, respiration 20, weight 140 (a loss of ten pounds in three months). While in the hospital he was placed on a high carbohydrate diet, received four injections of colloidal sulphur (1 c.c.) intramuscularly, a bland ointment locally, and another eighteen ounces of mineral oil. He was discharged May 18, improved as far as the exfoliative dermatitis was concerned, but constant dressings were necessary to absorb the exudation from the legs and umbilicus. The physical characteristics of the exudate had not changed. During the summer he received seven injections of colloidal manganese with no improvement.

On September 17, he was referred for a biospectrometric analysis.¹⁷ The most conspicuous finding was a very high retention of phosphorus (Fig 1-B). A study of this and related elements was suggested in psoriasis, since the therapeutic approach to affect the nickel retention¹⁸ had met with failure and the fact that the nickel ion had catalytic properties for hydrogenating or "hardening" various vegetable oils. The theory here is, that nickel may in some way affect the degree of saturation of the fatty acid in the tissues, thus making their oxidation more difficult.

At this time the patient presented a generalized guttate and numular type of psoriasis with an involvement of the face, palms,

this substance is essentially a foreign body type of tissue reaction. Where psoriasis or an eczematized dermatitis is associated with pustules, one should be mindful of past or present medication with mineral, fish or vegetable oils.

To date a sufficient number of cases have involuted to establish a therapeutic position for a demineralization regime in psoriasis. It is pertinent to record the observation that there is present in psoriatic tissue a substance which not only increases the susceptibility of the tissue to external irritation but in addition de-

lays the healing process. This substance disappears with involution. Having recognized the importance of an abundant intake of raw, fresh, green vegetables and their juices, carotin was given intramuscularly for the purpose of hastening the involution. The metabolism is stimulated by small doses of thyroid or thyroxin (Roche). A final report of this form of therapy with interrelated and concurrent general pathology, as well as the significance of a phosphorus retention in psoriasis is to be published.

100 W 59 St

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A DENTIST ON WHEELS

England has a dentist who has equipped an automobile trailer as a complete dental surgery, with a small waiting room and recovery cubicle and will tour villages in West Sussex. This is not a frantic scheme to track down the elusive patient, or to overtake terrified toothache victims who ring the dentist's bell and then run away. In fact, it is not for adults. The system has been devised so that school dentists can give proper treatment to children in

the scattered villages of rural Sussex. Half the battle in the preservation of young peoples teeth is won by arranging for regular examinations, the touring dentist can make sure of those examinations and without expecting the children to pay periodical visits to some possibly distant town. In other words, this type of dentistry is another example of the school health service and of work which has already yielded obvious and excellent results.

DOCTOR, NAZI EXILE, ENDS LIFE

Driven from Germany by the Nazi Government, his wealth and extensive practice lost, Dr Ralph Rotholz, 39, of 1166 Gerard ave. The Bronx, ended his life by poison on July 12, according to a newspaper account.

After arriving in this country four months ago, Dr Rotholz applied for a New York State permit to practice medicine. According to friends, he passed the State examinations with high honors, of which he was notified, and appeared optimistic of

his future. On July 12 he entered the Gerard Pharmacy, near his home, to talk with Abraham Snitofsky, the proprietor. Snitofsky said he spoke bitterly of his losses at the hands of the Nazis in Germany.

Snitofsky said he left Dr Rotholz alone in the rear of his store while he waited on a customer. When he returned the doctor was leaning against a counter with a vial in his hand.

He died soon after in the Morrisania Hospital. He is survived by a married sister

FOR MEDICAL PHOTOGRAPHY

Physicians who use photography to illustrate their work may be interested to know that the Biological Photographic Association will hold its sixth annual convention at the Hotel Lenox, in Boston, on September

24-26, with scientific papers and an exhibition of photographs and equipment. Information can be had from the secretary, Miss Anne Shuras, Magee Hospital, University of Pittsburg, Pa.

only ring on the paper. This observation immediately shed an entirely different light as to the possible cause of the exudation. After checking the old record, it was learned that he had taken this huge quantity of mineral oil. At this time sufficient excretion had taken place so that it was impossible to obtain enough for the actual isolation of the hydrocarbon. The various procedures carried out however, definitely established the exudate as an oily substance.

There now appeared a rather unusual clinical picture. Beneath the regrowth of epidermal cells, one could see pinhead size globules which on pressure would either break through the epidermal covering or slide around beneath suggesting the presence of a mobile foreign body in its last stages of excretion. The inflammatory reaction was gradually changing from the low grade type to an active reparative response, the irritating effects of the oily substance apparently being quantitative. After an elapse of ten days, the globules were no longer visible but a typical eczematous process supervened. This process was interpreted as the intervening stage between the macroscopic evidence of a subsiding foreign body reaction and the final reparative process which required about a month to bring about a complete involution.

Discussion

The gastrointestinal signs and symptoms related by this patient are usually considered trivial. They were of sufficient discomfort, however, for him to recall after a period of eight years. If one accepts them as one of nature's initial warnings, later to invoke a disturbance in assimilation which is bound to induce a subsequent metabolic derangement, the cutaneous manifestations become much less intriguing. Relative to this Sinclair¹⁵ reports increased blood phospholipids in chronic hemorrhage with its attendant secondary anemia and also in B-avitaminosis. In the light of recent experimental evidence, one must accept the action of liquid petrolatum in depleting the system of fat-soluble vitamins. Certainly this patient, for a period of at least three months must have been completely deprived of such substances. Another point to be considered as far as medication is concerned is the fact that cod liver oil was administered. Experimental data have showed that the high degree of unsaturation induced in tissue phospholipid by daily feeding of small amounts of highly unsaturated fat is maintained

despite prolonged fasting or the feeding of a diet rich in fully saturated fats.¹⁶ The clinical manifestations which might be produced by a change in the degree of saturation of the tissue phospholipid must await additional investigations. The fact remains, however, that cod liver oil is a highly unsaturated fat which was taken in relatively large quantities.

For some time it has been recognized that liquid petrolatum would set up a foreign body reaction in tissue. Norris¹⁹ reported two cases with peculiar abdominal symptoms who previously had had liquid petrolatum instilled in the abdominal cavity to prevent adhesions. The lesions were of a chronic inflammatory type and microscopically were considered one of foreign body reactions. A similar reaction and histologic picture occurs in paraffinomas.²⁰ Ball²¹ noted that in a case of lipid pneumonia in an adult the cause was the long-continued use of liquid petrolatum as a nasal spray. Recently a private patient complaining of frequent attacks of urticaria developed a cough and a slight hemoptysis. He was referred to Dr. George G. Ornstein,²² who stated that he had listened to an interesting history. This patient had for many years been using a combination of glycerine and vaseline intranasally. Both of these are pulmonary and bronchial irritants and it was his opinion that the bronchial fibrosis in both lungs was caused by the above foreign inhalents. It is generally accepted that absorption into the blood stream does occur by way of the capillary system of the lungs.

Summary

A case is here reported presenting a series of consequential events. Typical psoriasis became pustular, profusely exudative, and then eczematous just before involution. A large quantity of mineral oil had been ingested. The exudate was an oily substance.

Experimental data were cited which showed that mineral oil is absorbed from the digestive tract and produces a fatty infiltration of the liver as well as the adrenals. Attention was called to an exceedingly common clinical syndrome attributed to mineral oil. Recent studies show that mineral oil depletes the system of fat-soluble vitamins. The pathology of this substance is essentially a foreign body

occur as the result of abnormalities, we might call them, in the childbearing function, about two and one-half times as many as are due to tuberculosis and more than those caused by cancer."

In an effort to determine the reasons for the mortality from childbirth a number of studies have been undertaken in recent years in which individual and detailed case histories were used as the basis for conclusions and it was made evident in all of these that the responsibility for such deaths could be divided between doctor, patient, institution, and a number of other factors. These conclusions are based on studies developed by the Federal Children's Bureau, the New York Academy of Medicine, the Philadelphia County Medical Society, and similar investigations in other cities, some of which have not as yet been published. From these reports three principal conclusions may be drawn, namely, that there is a high and apparently unjustifiable puerperal death rate in this country, that there are remedies at hand for reducing it, and that a certain number of these deaths are definitely preventable.

The publication of these reports has attracted considerable attention and people have been awakened to ask what can and should be done to make childbearing safer. If as many as six mothers die in the United States for every 1000 live babies born, the saving of at least one-half of this number is a task to which we might set ourselves, because the preventability factor in obstetric deaths has been conservatively figured as no less than fifty per cent. From what is now known of the causes of these deaths and from the results of carefully worked out procedures in groups of selected cases, it is fair to assume that many of these lives could be preserved and that the methods for doing so should be made available to the mothers of the country in so far as possible. In order to accomplish this, however, it is essential that the thoughts of the public as a whole on the need for better obstetric care must be changed as well as those of doctors, nurses, and educators. "If we can change the thinking there are greater hopes of changing the action resulting from that thinking."

Admitting the seriousness of the situation and the desirability of developing

remedial measures, what must be done to supply the necessary motives to those who are able and willing to change conditions? If we, as physicians, are satisfied in our position and regard the present mortality rates as essential risks to childbearing, then we might as well fold our hands and do nothing. However, if we give heed to the fact that the medical profession is responsible in a varying degree then it must undertake the initiative in any movement for improving conditions. As the physician, however, is not concerned alone, a combination of interests must be developed and perhaps this can be done best by developing in each community, a procedure which will include in addition to the doctor, representatives from lay, social welfare and nursing groups, all operating together under the supervision and direction of the profession.

The problem varies naturally with the size of the community. In large cities it is very difficult to bring about concerted action. In New York City following the conclusions presented in the Academy of Medicine report, an advisory council of obstetricians was appointed by the Health Commissioner which has undertaken to further develop and carry out the recommendations made in the report. An attempt is also being made in the present hospital survey of New York to assess the obstetric facilities of the City.

All of this will take much time and effort for a successful accomplishment, but in the smaller towns and even in counties, the local medical groups should be in a better position to make a census of their obstetric facilities, including doctors, nurses, hospitals, and social welfare agencies. Many of the maternal welfare committees of our counties have already undertaken this but it will require continued effort and attention to keep the subject before the public as well as the profession. There are accepted standards of obstetric care both for the physician and for the hospital, but what we need as much as anything at the present time is to impress upon the public the need for such care and also judgment in the selection of their attendants.

The public should appreciate more fully the value of early medical care for mothers. It will not suffice to call in the doctor at the last moment. A considerable

THE PHYSICIANS' RESPONSIBILITY IN COMMUNITY OBSTETRICS

His Relation to the Maternal and Child Welfare Provisions of the New Social Security Act

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Editor, American Journal of Obstetrics and Gynecology

The arguments which have been advanced in the effort to make of obstetric practice a community problem have been presented in so many contributions to medical literature in recent years that it is unnecessary to review them again, for the thesis is quite generally accepted that successful childbearing can no longer be regarded as a problem for the individual. The local community, the state, and the nation are all concerned with the birth and rearing of healthy, normal children, and with the preservation of the mother as the fountainhead of the family. I stated on a previous occasion and probably others have done likewise, that personal health is closely linked with success and happiness and that the prosperity and spiritual welfare of the nation are in a large measure dependent upon good health. This means that the responsibility for achieving the latter must be equally divided between the individual and the community.

It was Dr. Hermann Biggs, former Health Commissioner of New York State, who claimed that good health is purchasable. This applies particularly to the means which may be taken to limit the spread of infectious and contagious diseases, because here the need of supervision by public authorities is so evident that no one can dispute the fact. It is extremely important, however, that measures designed for public welfare must have the cooperation of the medical profession, for without the latter definite and permanent progress would be impossible. The physician therefore, both as an individual and in his professional organizations, must assume a leading role.

Sometimes it is difficult to define the limits of public medicine as distinguished from those of private practice, but it should be possible to develop a common meeting ground provided that both sides

are ready and willing to lend their efforts to this effect. The difficulties seem to have been those of administration and with the lapse of time most of them have been successfully adjusted. Great strides have been made in the control, particularly of the various infectious diseases, by the development of cooperative measures between public health authorities and physicians.

In view of the significance of successful childbearing there are certain features in the practice of this branch of medicine that must likewise be regarded in the light of community as well as medical problems. This is evident in the acceptance of compulsory birth registration for the greater part of the country, of attempted midwife regulation, and the reporting of cases of puerperal sepsis. But what have we done as communities to make pregnancy and labor in themselves fairly safe procedures for prospective mothers? Efforts to do this may be recorded, as witness the move which our own State Society has made, among others, in developing its maternal welfare committees throughout the counties of the commonwealth. However, there is much more than this to be done if we are to measure success by improved puerperal mortality records. It is unnecessary to present detailed statistics to show that little permanent change has occurred in the puerperal mortality rate of this state or the remainder of the country. This has been done repeatedly. We may state briefly, however, that in 1933, 1168 mothers died in childbirth in New York state and more than 3000 babies in their first day of life and another 3000 in their first month. In addition, there were about 8000 stillbirths. Based on an average five-year period Dr. Thomas Parran, our recent Commissioner of Health, pointed out that, "during each year almost 17,000 deaths

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New York City, April 28, 1936*

support of the individual states in a movement of this kind by asking them to contribute in proportion to their ability and resources. This is not the place perhaps to discuss the political implications contained in the Social Security measure passed by the present Congress. We must regard the situation rather from a broader point of view by which the health of the nation is not limited by the political boundaries of states. It is of great importance that whatever is undertaken should be guided by properly qualified technical direction, and it would appear that a change of sentiment has slowly developed toward a movement which has culminated in certain sections of the Social Security Act having to do with child and maternal welfare. Their success will be measured to a large degree by the participation of the medical profession in their administration, for without the profession, success is doubtful. May I be permitted to outline the program?

Congress approved in August of last year an Act to enable each state, among other things, "to extend and improve as far as practical under the conditions in such state, services for promoting the health of mothers and children, especially in rural areas and in areas suffering from severe economic distress." For this purpose there was authorized an annual appropriation of \$3,800,000. The allotment for New York would approximate about \$170,000, provided the enabling act is passed by our state legislature. The fact that federal appropriations must be matched by similar ones from the individual states has unfortunately given the impression that we are to repeat a type of social legislation like that of the late and little lamented Shepard-Towner Act. That is really not the case. While the Federal Children's Bureau is vitally concerned with the administration of the measure, its actual execution rests with the state authorities, and as the Health Departments seem to be the logical agents for this purpose, these have been selected as the agents.

Attention may also be called to the fact that the medical phases of the work of the Children's Bureau are entirely in the hands of medical people and that this federal department is fully aware and recognizes the importance of cooperation

with the medical profession. All of the provisions of the Social Security Act in so far as they relate to the work in which we as a scientific section are interested are to be under the complete control of professional groups.

The provisions of the federal act are probably familiar, as they have been extensively detailed in various medical journals. It will be of interest however to call attention to certain arrangements which were developed at a meeting of the general advisory committee of the Children's Bureau in December last. The sub-committee on maternal and child health, of which Dr Henry F. Helmholz, Director of the Department of Pediatrics of the Mayo Clinic, is the Chairman, studied the question of the administration of the Act very thoroughly. It was the consensus of opinion that there should be in the state department of health, a division of maternal and child health, or a comparable administrative unit, with a director directly responsible to the chief health officer. It was further recommended and urged that the director be a physician and that additional medical staff for consultation and advisory service should consist of full-time or part-time physicians with adequate training and experience in this special field. The qualifications for the director were carefully defined but as the number of available candidates would probably not be large enough to meet the need, the committee approved the use of funds for the training of such personnel. Furthermore it was the opinion of the committee that as far as possible the work in any given area should be carried on by local qualified physicians, and where such are not available that other arrangements be made in local centers. All medical men participating in this work should be paid for their services.

In developing the program the cooperation of local medical, dental, and nursing organizations, as well as health and welfare agencies was strongly advised and even insisted upon. The further administrative details in view of the recent passage of the act would naturally require more time and study before they could be published. The importance of medical participation was generally accepted by all those at the Conference.

part of the high maternal death rate is due to indifference on the part of parents. Lay organizations have done much to educate the public in this regard, and with the public increasingly asking the medical profession for earlier and adequate care, we must prepare ourselves more fully for this growing call upon our services. We must insist, in the ranks of our own profession, on the cultivation of an attitude which will regard pregnancy and labor as normal processes, with interference by instruments practised only when clearly indicated, and then only by those possessing due skill and competence.

It is quite evident from the foregoing, that a solution of the problem involved in lowering our maternal death rate, depends not alone on the individual physician, there are others concerned including the patient, the nurse, the hospital, and above all the community itself, which in the end must provide the necessary facilities for assuring adequate care to prospective mothers.

We have heard much in recent years and have combatted as a profession the inroads of various proposals for socializing medicine. These objections are based largely on the experience of other countries, and physicians, as a class, have failed to be impressed by the claims in favor of imposing such methods of practice on the public and on the profession of the United States. There is abundant justification for this attitude. We especially deplore what we call "lay interference" in medical practice, not because it is 'lay,' but for a reason which we could well make clearer to the public: that it means creating a condition of bureaucratic control in which the doctor will continually be required to educate uninformed job-holders with veto-power on details of medical practice, matters that every physician, from education and experience, decides every day quickly, will be new problems on which the layman can easily go wrong. Now we must not confuse this serious objection to "lay interference" with the layman's legitimate activities in health education, and in the promotion of plans for the better care of mothers from a community standpoint. In fact, we should welcome them. I cannot speak too plainly when I say that the end result of this type of lay activity is to

send people to their family doctors earlier and more frequently, to prepare them for procedures that may involve time and expense and which they would otherwise be unprepared to approve. If, once in a long while, some persons or small groups active in our behalf in educating the public, become impatient for quick results and advocate socialized medicine, we must not condemn the entire machinery for popular education and promotion. This machinery has been created by voluntary and official agencies and has done much to develop a demand for the increasingly skilled services we are prepared to render. If we work with them, helping to guide their course, there is little likelihood of their promoting mass medicine. Close contact with us will prove to them how deteriorating socialized medicine would be to the very cause they are promoting. But if we cut ourselves off from them, because they dare to be concerned about their own mothers and babies, and because we mistakenly identify their activities with state medicine, they may, going their way alone, and without our help, be deceived by the glib promises of the proponents of socialized medical practice.

The United States is a large country, with varied population groups and varied social conditions, nevertheless, the care of prospective mothers should be uniform in all parts of this great country in so far as it is physically possible to provide it. Our national growth, as reflected in population increase, is being gradually halted, for statistical studies seem to show that in another decade our population may be stationary and that soon after we will have an increase of deaths over births, if nothing is done to maintain a proper balance. It is quite natural therefore that the federal government should take an interest in the problem of securing adequate obstetric care in order to maintain a population standard, and we may for the moment put aside all thoughts of politics and similar things, in giving attention to a federal program for the better care of maternity cases which has been included in the recent Social Security Act. It is unfortunate that questions of politics must enter into the picture although it is quite natural that the central government must assure itself of the

FACTITIAL (RADIUM) PROCTITIS

JOHN C M BRUST, M D, *Syracuse*

From the Proctologic Clinic of the Syracuse Free Dispensary

In 1930 Buie and Malmgren¹ named and described the lesion that is occasionally found in the rectum following the application of radium to the cervix uteri. Inasmuch as such treatment almost always is chosen for carcinoma of the cervix, the sudden onset of unexplained rectal bleeding, tenesmus, and passage of bloody mucus is a natural cause for alarm on the part of the physician and especially the apprehensive patient.

During the four months, April 1 to August 1, 1935, three women were referred to the Proctologic clinic of the Syracuse Free Dispensary because of rather sudden and unexplained rectal distress. Each had received radium therapy for carcinoma of the cervix within the preceding twelve months. The referring gynecologists and radium therapists were anxious to know whether the malignant process had involved the colon or rectum, either by direct extension or by lymphatic spread. The histories were all distinctive and highly suggestive. Following a period of from four weeks to ten months after the application of radium to the cervix the patients were alarmed by the passage of blood with the stools. The blood usually was bright red although rarely small darker clots were found. Two of the patients described a sense of pressure and uneasiness inside the rectum. It was not a sharp pain but more a feeling of urgency.

CASE 1 Mrs C V, aged fifty-two years, was first seen in the clinic June 6, 1935, complaining of rectal bleeding for a period of about six weeks, associated with a frequent desire to evacuate the rectum. In February, 1935, a carcinoma of the cervix had been found, and prompt and energetic radium therapy had been applied. There was no constipation, in fact, she felt that a diarrhea was present although a daily formed stool had been passed. Sigmoidoscopic examination revealed a normal sigmoid. The anterior rectal wall beginning about five to six centimeters above the anus was excessively red, bled very easily when wiped with cotton, and showed definite telangiectases. There was no gross ulceration apparent nor did the anterior

rectal wall seem thickened or fixed. The lateral and posterior walls appeared normal.

CASE 2 Miss R. H., aged thirty-nine years, had received a total of 3,200 milligram hours of radium for a squamous cell epithelioma of the uterine cervix during July 1934. She was referred to the Proctologic clinic June 15, 1935 complaining of rectal tenesmus, a dull aching far "inside" the rectum, and the frequent passage of bright red blood. No dark clots ever were noted. Bowels were fairly regular. Sigmoidoscopic examination revealed a normal sigmoid. The anterior rectal wall in the region of the second valve was markedly inflamed and bled easily. A small ulcer about one centimeter in diameter was observed in the center of this area and a dirty grey membrane was apparent on its base. Thickening of the rectal mucosa was evident on digital examination and because of this latter feature a piece of the ulcer edge was removed for microscopic examination. This was reported as simple inflammatory tissue.

CASE 3 Mrs B B, aged sixty years, was referred to the clinic on July 2, 1935 because of rectal bleeding of ten days duration. There were no changes in the bowel habits. Seven weeks prior to this admission she had received a direct radium application to the uterine cervix for carcinoma. A total of 4,200 milligram hours of radium had been applied.

She stated that for many years she had suffered from protruding, painful hemorrhoids but that "they had never bled before." Sigmoidoscopic examination revealed moderate sized internal and external hemorrhoids. The sigmoid was normal in appearance. On the anterior wall of the rectum beginning six centimeters above the anus there was an area about two by three centimeters in diameter where the mucosa was very red and "raw" in appearance. It bled easily and profusely and there were marked telangiectases. There was no gross ulceration, and no limitation of motion on the anterior rectal wall.

It was a considerable source of satisfaction in these three instances to be able to assure both the clinician and especially the patient that a malignant process was not apparent in the rectum. Some caution must be exercised in such reassur-

The question might well be asked at this point, what steps will be taken to develop the desired improvement in maternity care through this agency? The first object should be to inaugurate measures which would insure a reduction in the general mortality rate associated with pregnancy. Whether this is to be secured by the development of more adequate hospital facilities, by providing consultation centers, by furnishing improved nursing care, by education of the public, are all matters to be decided by the states in the development of their programs to suit local conditions. The Health Department of our state has already organized and has had in operation for some years a division of maternity and child hygiene, which, with the added funds could well develop a program of wider scope. In this work organized medicine has already participated but the effort will apply largely to the extension of this program to less favored areas and to rural districts. When the time comes for the development of administrative details our State Society must stand ready to cooperate and to direct its own participation in the scheme.

It may be claimed that all this is visionary and that it is not well-ordered. It is scarcely fair, however, to make such criticism because much of what is proposed may be regarded as novel and untried. The fact must be borne in mind that the problem of our high maternal death rate can be combatted only by concerted action and a scheme of this kind, adapted to the needs of the individual states, should be given a fair trial before it is condemned. The profession there-

more bears a very grave responsibility and the success or failure of this work will be governed largely by the spirit of friendly cooperation which is given. Shall we regard a maternal mortality figure of 61.4 per 10,000 total births in the state, as something which does not require attention and reform? This was the figure reported for February 1936. The average birth rate per 1000 population for the month of February from 1931 to 1935 was 14.9—the death rate for the corresponding period was 12.8. The difference is not very great and both rates for February this year approach each other very closely. If by concerted action we can cut this in half, for the preventability factor has been quite definitely established at fifty per cent, then much will be gained in the actual saving of lives, truly a worthy ambition.

The Act is now on our statute books and it has been placed there in response to public demand. There are certain features which may arouse discussion and even controversy but to dismiss a measure of this kind as merely an exhibition of governmental paternalism does not take into account the demonstrable fact that our maternal death rate is higher than it should be, and that it can only be lowered by well-ordered community efforts. We, as physicians, should guide the administration of this law, and if the final result is a lowered maternal death rate, the effort will be worth the price. The success or failure of the measure will rest largely upon the degree of cooperation of the medical profession.

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A GLIMPSE OF WHAT STATE MEDICINE WOULD BE

The following excerpt from the annual report of Dr. Louis D. Goldberg, outdoor physician for the Department of Public Welfare of Poughkeepsie, scarcely needs comment.

"Some of these people, I am sure, would never call a doctor if they had to pay \$3 out of their own pocket for the call. Many of the clients that called me to their homes could easily have come to my office for treatment. I have been called to their homes to see supposedly critically ill children when

the mother would have to call the child from the street where he was playing, I have been called to the home to treat ordinary corns, and I have often been called to the home and found that the patient had gone out for a stroll. Some member of the family would then request that I come back later when the patient returned."

This, dear public, remarks the Poughkeepsie *Star-Enterprise*, is what we're paying for under the guise of relief and welfare.

How long do we have to put up with it?

ACUTE OSTEOMYELITIS IN CHILDREN

ROBERT T FINDLAY, M D , F.A.C.S , *New York City*
From the Surgical Service of St Mary's Hospital for Children

A condition in which there is twenty-four per cent mortality in a children's hospital deserves serious and repeated consideration by all members of the medical profession

From January, 1922, through April, 1933, there were 131 cases diagnosed as osteomyelitis in the St Mary's Hospital for Children, New York City. Of these cases there were 105 patients, twenty-six being readmissions as recurrent or chronic cases. Of the 105 patients, fifty-five were chronic and fifty acute. It is with these fifty cases of acute osteomyelitis that this paper deals, as well as with a description of the subject in general and some views of recent writers

Etiology

Acute osteomyelitis is essentially a disease of childhood, during the period of active growth of bone, occurring only rarely in adults. Williams¹ recently reported ninety-one cases of acute osteomyelitis over a period of twenty years at the University College Hospital in London, in which there were only seven adults. In our series of fifty children the ages varied between five weeks and thirteen years, the average being 5.7 years. The ages having the most cases were one year, nine cases, five years, nine cases. Deaths occurred with greater frequency also at one and five years.

Another predisposing factor is sex. According to most authors, boys are three times more liable to the disease than girls. This does not hold true in our series in which there were twenty-seven boys and twenty-three girls.

The general health of children has an etiological bearing. Wakeley² believes, from his observations in England, that the incidence of the disease is not only decreasing but that it is less fulminating, due to improved child health and hygiene. Certain systemic diseases such as typhoid fever or influenza often precede an acute bone infection. Infections in the body, particularly those in which the staphylococcus may be found, are predisposing

factors. Some of these foci of infection are furuncles, carbuncles, superficial wounds, acne, paronychia, infected gums or teeth, tonsillitis, sinusitis, bronchitis, otitis media, pyelitis, and so on. Five cases in our series had a definite recent history of one of these infections.

Trauma, such as a blow, wrench, or twist of a limb, is thought to be important in the etiology. Probably boys are more liable to the disease because they are more subject to trauma. In our series there was a history of trauma in nineteen cases, no history of trauma in eight, and in twenty-four this factor was not mentioned.

The exciting cause of acute osteomyelitis is one of the pyogenic bacteria entering a bone through the bloodstream. In our series, out of thirty-seven positive cultures from pus obtained at operation, twenty-four showed staphylococci, ten streptococci, and three were a mixture of both. The staphylococci were designated as staphylococcus aureus, eighteen, staphylococci, type not specified, four, mixed staphylococcus and large spore bearing bacilli, one. The streptococci were designated as streptococcus hemolyticus in five cases, streptococci, type not specified in three, and streptococcus viridans in two.

According to Boyd³ the order of frequency of the causative bacteria is, staphylococcus aureus, staphylococcus albus, streptococcus pneumococcus, and typhoid bacillus.

Comper⁴ recently reported a case of acute osteomyelitis of the astragalus due to streptococcus viridans and stated that it is likely that this is the causative organism in more cases than is commonly supposed, as the viridans is difficult to grow on culture media.

Paley⁵ cited a case of acute osteomyelitis of the tibia in an infant of two weeks due to the gonococcus. He thought that the case was probably one of bloodstream infection localizing in the tibia, the mode of entry being the umbilical cord or by way of the midwife.

ance because of the possibility of ultimate direct extension of the carcinoma from the cervix into and through the recto-vaginal septum. Moreover, it must be kept in mind that despite such measure of treatment as we possess at the present time the eventual formation of a recto-vaginal fistula may occur.

These women were carefully instructed as to how best to care for the rectum. Warm, cleansing enemas using plain water at a temperature of 100 to 105 degrees were to be given daily following evacuation. A soft, rubber catheter was to be used for this purpose. The patients were told to inject two to three ounces of warm witch-hazel into the rectum and to retain this solution until the next defecation. No other medication usually is needed.

Although from one to two years, usually, are required before all evidence of the rectal lesion disappears, one may safely assert that, barring extension of the original malignant process, a speedy diminution of the distressing symptoms will occur. Some slight bleeding frequently may persist for many months and even for years. Usually in about two years healing will be complete. Occasionally the tenesmus is so severe as to necessitate injecting warm olive oil with a suspension of bismuth into the rectum.

The total number of milligram hours of radium that have been applied to the cervix does not seem to bear a direct relationship to the occurrence of proctitis. In the series reported by Buie and

Malmgren¹ as little as 800 milligram hours of radium produced a typical factitial proctitis, whereas, many patients who had received up to 12,000 milligram hours had no subjective evidence of any subsequent rectal involvement. The average time elapsing between the application of radium and the appearance of the rectal lesion as seen through the proctoscope in the series from the Mayo Clinic was 11.6 months.

A distinctive feature of this lesion is that it is nearly always confined to the anterior wall, and the lower margin of the involved area usually is about four to five centimeters above the dentate line. Frequently the self-inflicted abrasion from a carelessly introduced enema tip will be noted on the anterior rectal wall but it usually is immediately above the anus and the characteristic telangiectases are absent.

Summary

Three cases of factitial or radium proctitis are reported following the application of radium to the uterine cervix. The method of treatment is outlined. About two years are required before the lesion completely disappears. The characteristic picture of the proctitis as visualized through the proctoscope is described, and the salient features in establishing the diagnoses are discussed.

713 E. GENESEE ST

Reference

- 1 Buie and Malmgren, *International Clinics*, Vol III, Series 40, p. 69, 1930.

RADIUM RECOVERED FROM INCINERATOR

Fifty milligrams of radium, worth \$2,750, were lost recently from a desk in the Israel Zion Hospital in Brooklyn and recovered next day from the hospital incinerator.

The radium escaped unscathed from the intense heat of the incinerator, although the steel needles in which it was placed and their surrounding envelope of lead were fused into a solid chunk. Its hiding place in the incinerator was tracked down by an electroscope.

The electroscope is a brass can about the size of a tomato can. Through its middle runs a brass rod, attached with wax to the upper end of the rod is a strip of gold leaf. When the leaf is charged with static electricity, it stands at right angles to the pole, when discharged it hangs loosely. An eye

piece with a hair-line measuring device permits an observer to note the actual and relative position of the leaf.

The leaf is charged with an amber or rubber pole, rubbed either in the hair or with a piece of chamois, which rubbing produces static electricity. The time of normal discharge is noted on a watch. Then it is recharged and placed where radium is thought to be. The radiation of the radium will cause it to discharge. If the leaf discharges more rapidly than its normal, unaffected rate of discharge, radium must be in the neighborhood. Thus the radium is located by timing the discharges. When the electroscope is on top of radium the discharge is immediate.

our cases and were either not done or not reported in twenty-two. The lowest leukocyte count was 9,600 and the highest was 37,000, with an average of 17,728. The lowest polymorphonuclear percentage was forty-six, the highest ninety-four, and the average 76.6 per cent.

A negative x-ray should never rule out the diagnosis of acute osteomyelitis. Of our fifty cases, x-rays were taken in forty. The readings were negative on repeated examinations throughout the entire hospitalization in eleven, or 27.5 per cent, the x-ray on admission was negative but subsequent views became suggestive or positive in ten, or twenty-five per cent. In nine, or 22.5 per cent the first pictures were suggestive and in only fourteen, or thirty-five per cent did the first picture show definite evidence of osteomyelitis.

Complications

Some of the complications encountered in our series were: Otitis media, upper respiratory infections, pneumonia, appendicitis, endocarditis, nephritis, meningitis, and so on, many of these being manifestations of septicemia. Borman¹⁴ reported a case of renal calculus in a boy of nine with extensive osteomyelitis. He stated that these conditions are frequently associated. The calculus formation in this case was probably definitely dependent upon the osteomyelitis and not simply an associated incidental condition. He reviewed the literature and found many similar cases reported.

Treatment

The results depend a great deal on the proper treatment at the proper time. The proper treatment is adequate drainage and the proper time is just as soon after the onset as possible. Acute osteomyelitis should be considered as much or more of an emergency than acute appendicitis.

Morrison¹⁵ states that in the case of acute osteomyelitis that is promptly recognized and promptly treated there will be no involucrum, there will be no sequestrum, there will be no question as to time and method of operation, there will *not* be a deformed crippled child.

Cohn¹⁰ says that it is better to err when no osteomyelitis exists rather than to

delay. Surgeons agree that immediate operation for drainage is the proper treatment, but there is considerable diversity of opinion as to just what adequate drainage means and just how to obtain it. In our series, forty-seven of the cases were operated upon. In twenty-five, or more than half, the operation was incision and drainage down to the bone, *only one of these required a subsequent operation while in the hospital.* In seventeen cases the initial operation consisted

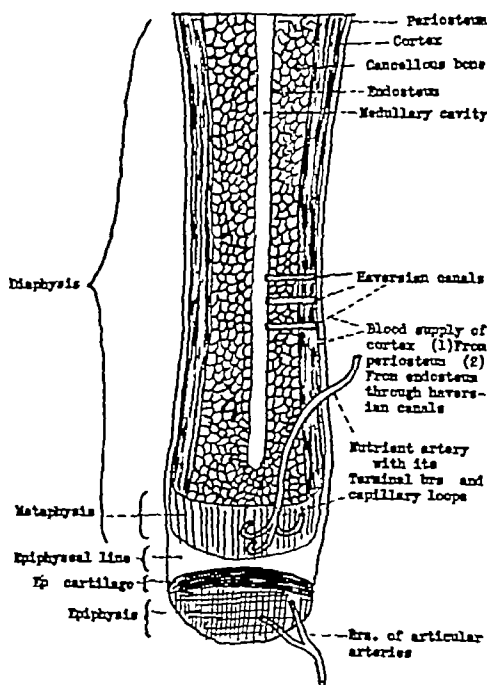


Fig 1 Diagrammatic anatomy and blood supply of long bones

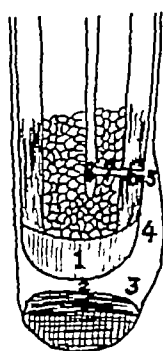


Fig 2 Spread of infection, theory, Number I

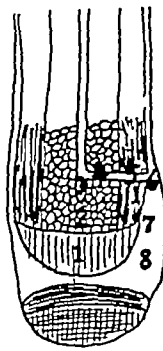


Fig 3 Spread of infection, theory, Number II

Pathology

The long bones are most frequently affected as evidenced by the following tabulation

	Cases		Cases
Femur	13	Ribs	3
Tibia	12	Clavicle	1
Fibula	6	Os calcis	1
Mandible	6	Ilium	1
Humerus	4	Frontal bone	1
Radius	4	Occipital bone	1
Phalanges	3		

One bone only was involved in forty of our cases, three bones each in three cases, four bones in one, and one bone and one joint in six

The nature of the blood supply of long bones (Fig 1) is interesting in our consideration of the pathology. According to Homans⁹ and others,^{7,8} the nutrient artery of a long bone richly supplies the metaphysis, which is the actively growing portion of the diaphysis. The arterial blood ends in abundant but large, curved capillary loops. These slow down the blood current and here the infecting organisms are best able to settle. The epiphysis receives its arterial supply from an entirely different source (branches of articular vessels entering its surface), while the arterial supply of the cortex is by way of the Haversian canals from both the endosteum and the periosteum. Thus the epiphysis does not share as much danger of infection as the metaphysis, and acute suppurations of the metaphysis must penetrate a fibrocartilaginous barrier to reach it. Moreover, these infections must travel backward through the cancellous portion to invade the medullary cavity and through the Haversian canals to penetrate the cortex. They may follow either or both of these courses. The most natural outlet is along the epiphyseal line.

Spread of Infection—Theory 1 (Fig 2) Boyd⁸ states that the disease always starts as an osteomyelitis and any peristitis is secondary and that the spread may be up and down the medullary cavity or out to the periosteum and that the neighboring joint is liable to be involved.

Theory 2 (Fig 3), of Starr,⁹ concludes, from animal experimentation and study of clinical material, that the infection starts in the metaphysis and extends

most easily along the epiphyseal line to the cortex and the periosteum. The pus formed under the periosteum strips it from the bone at an early stage and proceeds to make its way along the shaft between the periosteum and the bone. As the result of the increased tension the pus probably spreads backward through the Haversian canals and invades the medulla from the cortex. Thus, instead of the periosteum being infected from the medulla, it is the medulla which is infected from the periosteum. I believe that this second theory has an important bearing on the proper treatment. Continuation of the pathological process would bring us into the field of chronic osteomyelitis.

Diagnosis

The disease usually comes on suddenly, often at night. The first symptom may be a chill or convulsion followed by vomiting, fever, and pain in the bone near a joint. There is often a history of recent trauma or infection elsewhere. It is often confused with arthritis, rheumatic fever, rickets, scurvy, or syphilis. The onset may be so fulminating that the osteomyelitis is only found at postmortem, as in one of our cases who came to the hospital moribund, or it may be so mild that¹¹ only a small area of necrosis occurs which is followed by resolution and spontaneous cure without the diagnosis of osteomyelitis having been made. Sometimes the pain skips from bone to bone before settling down in one or more places. It should be possible to recognize the disease by local pain and tenderness.

Cotton¹² and Beekman¹³ stress the importance of eliciting tenderness by percussion over the suspected bone. The most constant symptoms in our series were, in order of their frequency, swelling, pain, fever, tenderness, pain on motion or inability to walk, vomiting, chills, convulsions, and delirium. There is a marked febrile reaction in most cases. Of our series sixty-eight per cent had a definitely septic temperature, ranging from 96° to 109° F. The greatest range in temperature was from 97° to 107°. The average low temperature was 98.6° and the average high temperature was 103.5°. Leukocytosis is quite constant. Blood counts were done in twenty-eight of

vulsions. Temperature was between 102 and 106.4° F, septic in character. There was no history of trauma. X-rays were all negative and there was a leukocytosis of 16,150 with sixty-six per cent polymorphonuclears. On admission the child was very toxic, the upper forearm region was swollen, hot, and tender. Simple incision was made through the periosteum in the region of the upper metaphysis of the radius and ulna. Pus was found under the periosteum of the radius which cultured streptococcus hemolyticus. The blood culture was positive for the same organism. The patient ran a course typical of septicemia, having many complications, such as an infected finger, hemorrhagic pustules of the skin, meningitis, and blindness, and died on her eighteenth hospital day. She was given several blood transfusions and other supportive treatment. There was at no time indications for further operative intervention.

CASE 3 N.T., a girl of four, was admitted with acute osteomyelitis of the ulna. She gave the history of a fall eight days before, followed gradually by pain, swelling and redness of the forearm. She ran a septic temperature between 98 and 104° F. The x-rays were negative except for some periosteal thickening at a later date. The leukocytosis was 20,950 with seventy-three per cent polymorphonuclears. Examination showed a red, tender, swollen area on the upper ulna side of the forearm. Simple incision through the periosteum was done. Pus was obtained which cultured streptococcus hemolyticus. The blood was negative. Her postoperative course was uneventful and she was discharged with the wound healed in twenty-two days. She was kept under observation in the clinic for several months, symptom free.

CASE 4 J.F., a girl of twenty-one months was admitted with acute osteomyelitis of the lower end of the tibia with suppurative arthritis of the ankle joint. Two weeks before admission she had had tonsillitis and a paronychia of a finger. Five days before admission she refused to stand and had fever. Three days before admission there was noticed swelling and redness just above the ankle joint. She ran a septic temperature between 98.4 and 105° F, all x-rays were negative. Her leukocytes were 11,400 with sixty-nine per cent polymorphonuclears. There was an obvious tender, red swelling on admission. An incision was made through the periosteum of the lower part of the tibia and on either side of the ankle joint. Pus was obtained in both regions which cultured streptococcus hemolyticus. The blood was negative, she was

discharged after twenty-one days and has been followed for several months in the clinic with both incisions healed, no limitation of function and no symptoms.

CASE 5 J.L., a boy of five, was admitted with acute osteomyelitis of the upper end of the fibula. There was a history of trauma fourteen days before admission with gradual onset of swelling, redness, and tenderness. He ran a septic temperature between 98 and 104° F and had a well-localized, tender, red swelling on the upper outer aspect of the leg. All x-rays were negative. Incision was made down to the bone, pus evacuated which cultured staphylococcus aureus. He was discharged after forty-one days in the hospital and has been followed in the clinic for several months with the incision healed, no limitation of function and symptom free.

CASE 6 * A.F., a boy of thirteen months, was admitted with acute osteomyelitis of the femur. Onset was twenty-four hours before admission with vomiting, fever, discomfort in the knee region manifested by holding knee slightly flexed and immobile. On admission there was swelling, heat and tenderness just above the knee. The temperature was 105° and the child was toxic. The leukocytes were 17,800 with seventy-six per cent polymorphonuclears. An immediate incision was done down to the bone, a loose edematous periosteum being found, culture from the region showed staphylococcus aureus. The course was rather stormy with a septic temperature which became normal in a week. Recovery was then uneventful and the child is known after six months to have no evidence of recurrence, no limitation of function and is symptom free.

Conclusions

- 1 Fifty cases over a period of eleven years are reviewed.
- 2 Theories of the spread of the infection are described with the thought that the medullary cavity is not necessarily involved.
- 3 The importance of early diagnosis and prompt surgical drainage is brought out.
- 4 Diversity of opinion as to the type of operation is mentioned, especially in regard to whether or not the medullary cavity of the bone should be opened in all cases.
- 5 Six recent cases are described, in

* Case 6 was not in the original series but was added from the Surgical Service of the Beekman Street Hospital, New York City.

of some mechanical opening or removal of bone. These were—chiseling bone in nine, drilling of holes or puncturing holes with curet or gauge in five, curetting bone in four, and so on. *These latter cases required no subsequent operations during their hospitalization.* The only operation in two cases was incision and drainage of a joint. In five cases a joint was opened as part of the operation on the adjacent bone. The treatment other than operation is much like that of septicemia—rest, fluids, blood transfusions, and so on. The type of dressing is very variable but this makes little difference if adequate drainage has been obtained.

Opinions of various surgeons have been reviewed in the recent literature as to the particular type of operation advised. DaCosta,¹⁰ Portis,¹⁷ Ryan,⁸ Carruthers,¹⁸ Chappel,¹⁰ Albee and Patterson,²⁰ Cohn,¹⁰ Homans,⁶ and Beekman¹³ advise different methods of opening the medullary cavity, although Beekman states that the periosteum only may be incised. Wakeley² and Arnold¹¹ evidently adhere to the theory that the route of spread of osteomyelitis is from immediately under the periosteum inward to the medullary cavity and advise opening only the periosteum in early cases.

Morbidity

The number of days in the hospital in our series varied from one to 178 days, with an average of thirty-nine days and a total of 1,948 hospital days for the fifty cases. Bearing in mind that we are dealing with acute osteomyelitis only, and not recurrent or chronic, in which the morbidity is much higher, it is readily seen that the economic problem of this disease is considerable. Stone²¹ recently presented many figures to show the cost to a hospital in caring for this disease, as well as the cost of medical attention and hospital care to the patient, also the economic burden because of interference with education, loss of time from work and loss of quality of work due to prolonged illness and frequent deformity. The condition of our patients on discharge from the hospital was noted as healed in twelve cases, healing in twenty-one, and five cases were discharged against advice, improved.

The mortality was twenty-four per cent, twelve patients. These cases were in the hospital for an average of nine days, nine had positive blood cultures, in the other three the blood was not cultured. The average number of days between the onset of symptoms and admission to the hospital in these fatal cases was 58 days. The type of treatment was simple incision to the bone in seven, some bone operation in three, and no operation in two. In Williams'¹ larger series in London the mortality was 197 per cent. He,¹ Beekman¹³ and Cotton¹² state that the results, both as to mortality and destruction of bone, are improving due to more prompt surgery.

We were able to obtain accurate follow-up data on nine of the remaining cases, viz. One case was readmitted for further bone operation 2½ years after discharge from the hospital, two were known to be well, having had no symptoms or recurrences after eight years and another after five years, and six were known to have been discharged from the clinic after a few months of observation, symptom free and with their incisions healed.

Six cases are briefly described that have been operated upon, by simple incision and drainage down to the bone, during the past year.

CASE 1 M.A., a colored girl of ten, was admitted with acute osteomyelitis of the femur. Six days before admission the onset was with pain in the hip, knee, and ankle, painful motion, refusal to walk, and fever. There was no history of trauma. On admission there was a tender swelling on the anterior aspect of the upper femoral region. Her temperature ranged between 98° and 106° F septic in character. She had a leukocytosis of 16,050 with eighty-six per cent polymorphonuclears. Her initial x-rays were negative, they later showed periosteal thickening. The soft parts and periosteum over the upper part of the femur were incised, only serum obtained which cultured staphylococcus aureus. The blood culture was negative. She made a good recovery and was discharged after eighty-two days with the incision practically healed.

CASE 2 L.F., a female of 2½ years, was admitted with acute osteomyelitis of the radius. Her onset was seven days before admission with fever, painful motion of the arm, local swelling and redness, and con-

ALLERGIC MANIFESTATIONS OF FUNGUS DISEASES

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Clinical manifestations due to bacteria depend on the specific etiological agent and on the soil in which the disease develops. Dermatology has shown many times that the same organism can give rise to totally different syndromes while unrelated pathogens can initiate practically identical clinical pictures.

The skin diseases due to micro-organisms can be divided into the classic types which have been so well-described by the older dermatologists and those atypical forms which have only recently been recognized as belonging to this group. These atypical forms have been called by Bloch the cutaneous microbids. We owe the development of this phase of dermatology as far as fungi are concerned to J. Jadassohn and B. Bloch.

Cutaneous microbids depend for their development on the interactions between bacteria, fungi or their products with the allergic skin. This allergy is due to an acquired hypersensitivity to micro-organisms or their products which develops after the disease process has existed for some time. The degree of acquired hypersensitivity is dependent on the causative organism and on the individual in whom the disease develops.

Among the cutaneous microbids we have tuberculids, trichophytids, leuroides, etc. Trichophytid is the general term which has been applied to the microbid associated with fungus infections. More specifically associated with epidermophytosis we have epidermophytids with microsporie microsporids, with favus favids and with monilia leuroides or better mycids. The first clinical description of trichophytids was given by Jadassohn in 1911, after the experimental groundwork has been prepared by Bloch.

Pathogenesis of Trichophytids

The epidermophyton and trichophyton fungus grow in the nonliving layers of the skin and its appendages. Because of this fact they give rise to clinical mani-

festations which are primarily of a very superficial nature. Marked inflammation does not develop unless living structures are invaded. Invasion by the fungi of living structures or contact of fungi or their products with the living parts of the skin probably initiate the hypersensitivity with its resulting allergic manifestations. W. Jadassohn and Sulzberger have shown in experimental fungus infections in guinea pigs that the apparent dermatotropism (keratinotropism) of fungi depended on their need for dead tissue such as is found in the keratin layers of the skin, the hair shaft, and the nails. When they injected guinea pigs intracardially with fungus spores there was a hematogenous dissemination all over the body, but fungus infection only developed in the non-living parts of the skin. However, when the animal was killed, shortly after injection and the internal organs were cultured, fungi readily grew from this dead tissue. It is of interest to note that the lens of the eye (Jadassohn-Rehsteiner) could be infected with fungi just like the keratin layers of the skin.

A *sine qua non* for the development of trichophytids is a hypersensitivity to fungi or their products. This sensitivity is revealed by a positive trichophytin reaction. Fortunately the trichophytin test represents a group reaction in the majority of instances. This means that the test does not usually have to be made with the identical fungus causing the lesions. Previously it was thought to be present only in the deep inflammatory fungus infections, such as kerion celsi. Recently however it has been demonstrated that even superficial fungus diseases were frequently accompanied by sensitivity to trichophytin. The hypersensitivity to fungi develops after the primary infection had existed for some time. The period between onset of infection and the development of hypersensitivity varies from a few months to several years depending on the type of fungus, the site of the primary

all of which simple drainage down to the bone was done, five with good results, the other fatal, death being due to septicemia, which was undoubtedly present before the operation

6 This study has assisted the writer in the opinion that simple incision through the periosteum is probably the operation of choice in a large majority of cases

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SPARK OF LIFE SAID TO BE ELECTRIC

In his new book, "The Phenomena of Life," Dr George Crile, of Cleveland, puts forward his theory that electricity is truly the elusive spark of life and that our bodies are made up of cells which are really minute but powerful electric furnaces—radiogens, he calls them. Scientists generally have not yet accepted Doctor Crile's theory, which he has expounded for many years and for which he continues to seek experimental proof. In his own words, his radio-electric theory of life is as follows:

Oxidation produces radiant energy

Radiant energy generates electric currents in protoplasm

Electricity is the energy that governs the

activity of protoplasm

The normal and pathological phenomena of life are manifestations of protoplasm

Therefore the phenomena of life must be due to radiant and electrical energy

In the course of his investigations, he was led to believe that the brain, the liver, and the adrenal glands "provide the clue to the control of the energy that most immediately governs life, the failure of which causes death"

Protoplasm is, in Doctor Crile's opinion, "a system of generators, conductance lines, insulators, and infinite numbers of infinitely thin films for holding electric charges"

—*The Diplomat*

LATIN-AMERICAN CONGRESS OF PHYSICAL THERAPY, X RAY, RADIUM

The 2nd Congress Cruise, scheduled for August 1936, has been deferred to March 4, 1937, so that the Congress can be entertained the week of the inauguration of the President, Gen Jorge Ubico, and the national festivities at that time. The sessions will be held in the National University School of Medicine, Guatemala City. Registration closes December 1. Those interested in giving demonstration or delivering

papers at this convention may register with Norman E. Titus, M.D., 730 Fifth Ave., President, Madge C. L. McGuiness, M.D., 1211 Madison Ave., Secretary, or C. L. de Victoria, M.D., 1013 Lexington Ave., Executive Director.

Special information concerning the trip will be given at the Waldorf-Astoria Hotel at the Fifteenth Annual Meeting of the American Congress of Physical Therapy September 7-11.

IT IS A MARK OF DISTINCTION

Not long ago a physician applied for a position with a large organization and was turned down because he did not belong to his county medical society. This physician had been in practice for eight years and had never taken the value of his county medical society into consideration.

This unfortunate physician did not know that industrial organizations desire men who themselves belong to their own medical society. They are becoming more and more aware that physicians who belong to their county medical society are the enterprising men in their field. They are the men they want.—*Bulletin, Med Soc Co of Queens*

FUNGUS DISEASES

Number 171

- c Tendency to spontaneous involution after healing of the primary focus,
 d Focal reactions after injection of sufficient amounts of microbidin*

Types of Tricophytids

It has been shown that the tricophytids appear in an individual having a focus of fungus infection provided that hypersensitivity to the fungi or their products developed. After the hematogenous dissemination of the organism or their products, the allergic manifestations will take place in that organ which is the particular shock tissue. In the case of fungus infection, the skin is that particular organ.

While it is true, as is the rule for other microbic diseases, that different fungi can elicit the same clinical picture and that totally different skin manifestations can be found associated with the same fungus, it was found fortunately that in the majority of instances we could associate the various types of tricophytids with certain of the primary fungus diseases. Thus the lichen tricophyticus, usually accompanied markedly inflammatory fungus infections such as kerion celsi (tricophytosis) while the dishydrotic eruptions of the hands were usually found associated with the epidermophyton infection of the feet.

The localization of the embolized fungi and the site of greatest skin sensitivity played an important part in the morphology of the resulting tricophytid. If the organisms finally became localized in the vasa vasorum of the subcutis, a subcutaneous tricophytid (erythema nodosum) developed, if they became localized in the vessels of the hair follicle lichenoid forms resulted, if the epidermis was a special site of sensitivity eczematoid tricophytids were found and if the hypersensitive organism was flooded with toxins diffuse scarlatiniform eruptions were seen.

As can be seen from Table I the tricophytids could be classified under four headings, depending on their histologic and clinical characteristics. The epidermal and cutaneous types were the most

common. The lesions under Group IV have only lately been recognized as tricophytids, and I have observed several cases in which the recurrent phlebitis seemed to be accompanied by other vascular sensitivities, even epileptiform seizures. No doubt the most important and frequent tricophytid observed was that accompanying epidermophytosis. The epidermophytosis was usually on the feet, while the epidermophytids were on the hands. The essential proofs for their relationship as laid down in previous paragraphs, have been well-established in this important

TABLE I—TYPES OF TRICOPHYTIDS (MODIFIED AFTER BLOCH)

I Epidermal Tricophytids (epidermis mainly involved)	
1	Eczematoid (dyshydrotic)
2	Lichenoid
3	Parakeratotic
4	Psoriasiform
II Cutaneous Tricophytids (papillary body mostly involved)	
1	Diffuse forms
a	Scarlatiniform exanthemata and enanthemata
b	Erythroderma
2	Circumscribed and disseminated forms
a	Follicular localizations usually lichenoid
b	Not exclusively follicular
1	macular, papular, and even exudative eruptions
c	Erysipeloid
III Subcutaneous Tricophytids (nodules found in the hypoderm of the type of erythema nodosum)	
1	Acute resolving form
2	Destructive chronic form
IV Vascular tricophytids	
1	Migrating phlebitis (venous)
2	Urticaria (capillary)

group by the work of Peck and W Jadasohn. Even such difficult evidence as positive blood cultures for fungi have been presented by Peck and Strickler, Ozellers and Zalel. Furthermore, Peck has been able to reproduce the whole clinical syndrome experimentally in humans. This was the first time that a spontaneous experimental tricophytid had been reproduced in a human subject.

While the dishydrotic tricophytids and the type known as dishydrosis lamellosa sicca were fairly easy to diagnose, the eczematoid tricophytids, especially when they occur on the hands, were often impossible to differentiate from ordinary eczema. It is just in this group that failures of diagnosis occurred because of the great prevalence of epidermophytosis of the feet with its accompanying positive tricophytin reaction. This difficulty of

* Microbidin. I must apologize for the introduction of a new term in a branch of medicine so overloaded with names, but it is only proper to give this general term to the extract of vaccine which denotes skin sensitivity in cases of microbidin.

infection, and the infected individual. It is very difficult to determine whether atopy plays a role in the development of this hypersensitivity. In the available statistical data a history of atopy seems rather unimportant, especially as far as the epidermophytids on the hands are concerned.

Trauma, such as treatment with strong ointments, x-rays or continuous maceration which is frequently seen between the toes, forces the fungi or perhaps their products into the blood stream. These in turn coming in contact with the hypersensitive skin gives rise to trichophytids. The localization of the trichophytids may depend on the anatomy of the circulation or other rather obscure moments. The work of Truffi with fungi, and of W Jaddassohn with tuberculosis, has shown that localization can be determined experimentally by causing rupture of capillaries thus allowing the circulating noxa to become free and reach the skin. The circulating organisms are changed by immune bodies in the blood and reach the skin in an attenuated state. To reach the keratin layer, that is, the dead issue in which they can grow, they pass through the living structures which have become hypersensitive. The resulting interaction destroys the majority of them and gives rise to the trichophytids. If any organisms pass through these barriers and reach the dead tissues they can be demonstrated in the trichophytids. This is rather a rarity.

If we were to assume that not only the fungi but also their toxins can give rise to trichophytids it would be easy to understand why trichophytids are usually sterile. Such an assumption, however, would not explain the localization of epidermophytids on the hands only, secondary to the fungus infection of the feet in the presence of a generalized skin sensitivity. Furthermore, it has not been possible to demonstrate such circulating toxins while positive blood cultures for fungi identical with those causing the primary infection have been obtained.

Williams has pointed out that once hypersensitivity has been established, even the primary lesion is a combination of epidermophytosis and epidermophytids. This explains the difficulty very often encountered in demonstrating fungi from such areas. It is obvious that scrapings

from trichophytids will give negative microscopic results.

It is within the realm of theoretical possibilities that contact with primary lesions can cause transportation of the organisms to other parts of the body and give rise to trichophytids by contact. The eruptive character of most of the microbids speaks against such a conception. Such a possibility must be borne in mind however, when non-symmetrical isolated lesions are found which are considered trichophytids, especially those in which the organisms are more readily demonstrated.

It is even conceivable that organisms of great virulence can reach areas of skin hematogenously and in the presence of a moderate degree of hypersensitivity win through all barriers and give rise to lesions which are real secondary foci of epidermophytosis (trichophytosis).

Since the attention of dermatologists has been focused on the microbids this diagnosis is being made with great frequency. Very often the proper supporting evidence for such a conception is lacking. Experimental and clinical research has established certain definite criteria which must be present to support such a diagnosis. Such criteria are as follows:

- 1 The causative organism must be demonstrated in what is recognized by every one as a classical manifestation of the disease.

- 2 While it is not absolutely essential, the organism which is cultured from the primary lesion should be pathogenic.

- 3 A positive reaction analogous to a tuberculin or a trichophytin reaction must be present.

- 4 What is considered to be microbid should be seen as a frequent accompaniment of the primary lesion.

- 5 Positive blood cultures for the same organism isolated from the primary lesion must be obtained since it is admitted that most of the microbids are hematogenous eruptions. This is necessary because there is no reliable method of demonstrating the presence of circulating toxins.

- 6 The microbids must develop subsequent to the primary infection.

- 7 The microbids must usually be sterile.

- 8 A support for the conception of a skin eruption as an "id" lies in certain clinical characteristics:

- a Appearance of the "ids" in showers,
- b Tendency to symmetry in distribution because of hematogenous origin,

Discussion

DR. EUGENE F. TRAUB, *New York City*—We have just heard an excellent summation of the generally accepted facts and theories of the ever-increasing syndrome, "dermatophytosis." From decades of early neglect, after its original description, this malady has suddenly stepped to the forefront to such an extent that it has taken years of careful recheck work on the part of such conscientious observers as C. M. Williams, Jadassohn and Peck, Bloch, and others to limit the concept somewhere within the reasonable bounds dictated by the facts and the actual findings. Dr. Peck's ideas are almost entirely in accord with those repeatedly expressed by Tolmach and myself,¹ therefore, I shall simply cover a number of the salient points of the paper which should be further stressed.

It is stated that "it should be a *sine qua non* for the development of dermatophytids to have a hypersensitivity to fungi or their products." A number of authors, Williams and Carpenter, Pels and Schlenger, Tolmach and Traub, and others, however, have reported negative trichophytin tests in cases where fungi have been recovered and cultured, some of the patients also having clinically typical dermatophytids. It is important to draw attention to the fact that such cases occur. A number of explanations for such a phenomena may be given.

1 There is probably considerable time variation in different individuals after infection before the development of a positive test. Dr. Peck has intimated that this interval may be months or years, and though perhaps it is possible that it may be shorter in some cases, certainly in those requiring years to develop a hypersensitivity we would expect negative tests over this long period.

2 In some cases perhaps we are dealing with an organism which fails to react sufficiently strongly to the polyvalent stock testing material to be recorded by the reader of the test as positive.

3 Another explanation given is that the patient is in an anergic phase. This is not entirely clarified and undoubtedly still belongs in the field of speculation.

4 *Delayed reactions* At the end of twenty-four to forty-eight hours, tests may be recorded as negative which if the patient is observed closely, may develop into definite positive reactions. I believe this is particularly true in those patients evincing an eczematous type of response.

5 *Imperfect standardization* The more opportunity I have had to observe tests performed and read by others, the more I am convinced that this is a fruitful source of variation and difference of opinion confusing later reports. Strong tests or completely blank ones offer no

difficulties, but those in between, or delayed reactions still leave too much leeway for error despite all efforts to date to standardize.

It is unnecessary to stress the well-known fact that a patient with a negative reaction should not be given a subsequent test too close to the original trial site lest a false positive result.

The question about the immune bodies in the blood stream is interesting and important. Per and Braude, Jessner, Ayers and Anderson, all reported the presence of "growth-inhibiting antibodies" of one kind or another in the blood sera of patients hypersensitive to fungi. We failed to entirely confirm these findings in several experiments and our attempt to put these hypotheses to practical application was only moderately successful.

We selected fourteen cases of clinically typical and microscopically confirmed cases of dermatophytosis with dermatophytids. We also selected four cases of confirmed dermatophytosis of the feet alone. The duration of the disease in these cases varied from a few weeks to several years. To each of these patients we gave subcutaneous injections of serum obtained from patients with fungus infections of the feet accompanied by dermatophytids whom we had completely cleared of the eruption with the usual topical remedies. Three of the fourteen cases of dermatophytosis with dermatophytids were completely cleared. Two of the four cases of foot infection alone were completely cleared. There were recurrences within a period of three weeks to two months in four of the five cleared cases. The fifth case disappeared from our clinic. In sixteen of the eighteen cases, there was noted a very definite clinical improvement in both hand and foot lesions after the first to the third injections. Also, it was noted that in most of the cases, after this initial improvement, the condition remained stationary. In two cases, no changes were noted.

The number of cases is obviously small. The difficulty of obtaining serum and having suitable subjects on hand at the same time is evident. The conclusions to be drawn from this experiment can only be speculative.

The criteria laid down, before a diagnosis of a dermatophytid is acceptable, are worthy of emphasis. I have already suggested that the diagnosis has been much abused, cases being presented at many meetings as a dermatophytid when even the diagnosis of tinea has not been established by microscopic or cultural investigation. While these may represent extreme instances of the wrong thing to do, there are also some of the criteria generally impossible of fulfillment. I refer particularly to the recovery of the organism from the blood. Why

diagnosis and the need for methods of differentiation is well-recognized by all workers in the field. It is for this reason that serological criteria for diagnosis have been attempted.

Recent literature, both foreign and American, has become increasingly filled with the discussion of levurids—those mycids which are due to monilia. Ravaut, a pupil of Sabouraud, described the first cases. Very interesting examples of such eruptions have been demonstrated by Ramel, Hopkins, and others. As Bloch has pointed out in discussing the research work of Staehelin from his Institute it was very difficult to prove that an eruption was a levurid. One of the chief stumbling blocks seems to have been to prove a pathogenic role for monilia cultured from what is called the primary lesions. It was difficult to be certain that the reaction following the intradermal injection of oidiomycin was based on true hypersensitivity because of its practically one hundred per cent incidence in the adult. The last, however, cannot be considered as very strong negative evidence when we consider that the number of the oidiomycin reactions increase with the age group and that in certain classes of the population even the tuberculin reaction may approach one hundred per cent incidence. However, one of the most important steps in the evidence necessary to prove the existence of levurids, namely positive blood cultures taken under rigid control conditions, was lacking.

Nevertheless the question of the role of monilia and related organisms as secondary invaders in fungus infections, eczema, and other skin conditions must be considered, especially if we are to place any value on a positive oidiomycin reaction.

Treatment

While the treatment of the fungus disease itself depends on the use of proper antiseptic measures, the therapy of the allergic manifestations depends on complete eradication of the primary focus. The practical problem facing us today in these conditions resolves itself into the treatment of fungus diseases of the hands and feet. It is almost impossible to cure many patients with epidermophytosis of

the feet because of the constant opportunity for reinfection and because of involvement of nails and nailbeds which are inaccessible to treatment. Furthermore, with the increase of the duration of the infection more and more of the effected individuals develop a hypersensitivity to the fungi and their products. A resistant case demands vigorous treatment. With the use of strong antiseptics and kerolytics the fungi or their products are forced into the blood stream and cause a development of more trichophytids locally and at a distance.

It will be admitted by all dermatologists that a limited amount of x-ray therapy is of great benefit, especially in the treatment of the epidermal and cutaneous trichophytids (Table I). It must be borne in mind, however, that x-rays in vitro do not kill fungi when many times the dosage employed in skin therapy is used.

The use of fungus extracts for therapeutic purposes has not been as promising as has been anticipated. Since its first application in fungus disease in 1908 it has come into prominence for the treatment of the superficial fungus diseases. Takhashi, Wise, Sulzberger, Traub and Tolmach, Kingsbury, Templeton, and others have published their experiences. Wise expressed the opinion of most of the investigators when he summarized the results as disappointing. It must be admitted, however, that in spite of the poor results so far reported it is only through biologic methods that progress in the treatment of these chronic conditions will be made. It is possible that new methods of preparation of the fungus extracts will bring about better results. The treatment in the past has been based on an attempt to bring about a hyposensitivity to trichophytin. It is more important to develop by our injection therapy an immunity to fungi and thus perhaps prevent dissemination from the primary focus or bring about neutralization of toxins as they are formed.

125 E 72 St

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WHAT CONSTITUTES AN INTERESTING CASE?

The Proper Study of Mankind is Man—Pope

PAUL H RINGER AB, MD FACP Asheville, North Carolina
*Presidential address to the Medical Society of the State of North Carolina,
Asheville, May 4-6, 1936*

It is with a deep feeling of pleasure that I preside at this meeting today and stand before you clothed with the office of chief executive of the Medical Society of the State of North Carolina. That it is a source of pride to me to have been elected to this office is but natural. The deepest feeling of gratification that I have experienced, however, is due to the fact that my colleagues, the men whom I have known and with whom I have worked for thirty years, have considered me worthy of selection for this position. The possession of the confidence and respect of fellow-physicians is the greatest prize that can be won, and I deem myself undeservedly fortunate in having received this evidence of the well-wishings and friendship of my associates in the practice of medicine throughout the boundaries of our commonwealth.

For the past five or six years presidents of medical societies the country over have felt that there was but one subject on which they should address their fellow-members on those occasions when it behooved them to do so, namely, Medical Economics. So much has been written on the various phases of this general topic that many are getting very tired of it—myself among others. My address to the House of Delegates, delivered yesterday evening, had necessarily to concern itself with the business of the Medical Society of the State of North Carolina, in which naturally medical economics played a major part. In my address today, however, I was very anxious to get away from the business end of medicine and to consider a more scientific phase. I did not wish to choose a subject too technical or one too specialized. I wished to select a topic that would appeal to all physicians, irrespective of any particular branch of practice.

Doctors never gather together than one of them does not say 'I had an interesting case the other day'—and then the

about is on and "interesting cases" are swapped as are stories in a Pullman smoking compartment. The topic upon which I wish to dwell this morning is "What Constitutes an Interesting Case?" The approach to the question can be many-sided—the answers can be equally varied.

If one has talked with colleagues and has read reports of interesting cases in the literature, one must be struck with two factors that predominate, first, rarity and second, incurability. Often the most important and convincing element in the entire report of the interesting case is the protocol of the necropsy. Does this state of affairs mean that ordinary treatable and curable cases are, therefore, uninteresting? Let us consider a while the elements that go to make up an interesting case.

The object of medicine is three-fold

- 1 Prevention—eradication of disease
- 2 Prophylaxis—protection from existing disease
- 3 Cure

Once a "case" of any sort is seen it obviously belongs to class 3. Consequently, the primary object of the practice of medicine lies in class 3 and consists in the proper administration of successful therapy. Therefore, the final goal of all medicine and surgery is therapy. But we must realize that adequate therapy is unavailable in the absence of accurate diagnosis, therefore, the two legs upon which rest the practice of medicine and surgery are diagnosis and treatment. No one realizes better than myself what platitudes I have just uttered, they seemed necessary, however, for the further development of the subject concerning which, as far as I can discover, very little has been written. My friend, Dr W R Houston,¹ now of Austin, Texas, wrote a brief paper on this matter in the *Chma Medical Journal* some twelve years ago. That is prac-

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this has been accomplished so rarely when many thousands of attempts have been made during all stages of the disease by observers in all parts of the world has never been satisfactorily explained. Therefore, while admitting that a positive blood culture would be ideal if obtainable, a case may be accepted without this bit of evidence, and, as stated above in exceptional instances, the trichophytin test may also be negative and yet the patient have a bona fide dermatophytid.

In discussing the use of fungus extracts for therapeutic purposes a comment is made which ordinarily I should have permitted to slide by had not a somewhat similar, but more blatant statement been previously made elsewhere. I quote, "Many of the reported failures of trichophytin therapy may well rest on faulty diagnosis or improper technique of administration." I think I am expressing the feeling of most dermatologists who have had experience with this therapy when I say that it would perhaps be more appropriate were I to paraphrase the quotation, changing just one word, to read, "Many of the reported *cures* of trichophytin therapy may well rest on faulty diagnosis or improper technique of administration." Briefly stated, the reasons for this suggestion follow:

- 1 Those reporting cures from trichophytin have failed in the majority of instances to offer satisfactory proof that they were actually treating cases of fungus infection.

- 2 Generally no attempt was made to prove the presence of dermatophytids.

- 3 Their experiments were uncontrolled, i.e., credit was given to the fungus extracts when such remedies as the x-rays, Whitfield ointment or other forms of local therapy were used simultaneously.

- 4 No allowance was made for the various and extremely important influences affecting the course of this disease, such as the patient's general status, seasonal changes, spontaneous remissions, and other similar factors.

- 5 They failed to observe their cases for a sufficiently long time to warrant the justification of the use of the word "cure."

- 6 In commencing a study on a therapeutic remedy for the treatment of an obstinate dis-

ease, one does not do so "wishing" that the preparation may prove to be a failure. Those reporting failures, therefore, cannot be looked upon as suffering from "wish fulfillment" nor were they apt to be hounded by pharmaceutical concerns to contribute testimonials. I should like to refer specifically to a remark made by Dr. Charles Mallory Williams in discussing the paper I read before the American Dermatological Society on Dermatophytosis in 1934, quote: "I may state that I applied to a firm for some trichophytin for experimental purposes and was told that I could not have it unless I would say that it was effective. Needless to say, I did not obtain the vaccine."

As far as the technic of administration is concerned, I am sure the majority of men could have no difficulty in following the careful directions given in the various articles and pharmaceutical brochures. They were made explicit enough to be followed by the ordinary family physician. In our cases, however, no defense of technic is necessary because in most of our cases we used the same technicians that were employed by some of the more successful authors.

After showing that hypsensitization to trichophytin had apparently little if any effect on the course of the disease, we transferred our efforts to an attempt to stimulate the natural defense mechanism (immunity response) of the patient. Therefore, I agree entirely with Dr. Peck that at present our best hope for progress toward establishing a cure in the many obstinate cases rests along these lines:

DR. HERMANN FEIT, *New York City*—Fungi vegetate only on dead tissue, namely the corneal layer, but might penetrate sometimes deeper. Topical remedies, trichophytins, and x-rays have been disappointing where cure is concerned. We must eradicate the foci of fungus infection of the skin and clinical research which I am now doing seems to show that Lugols solution, introduced by iontophoresis on one foot, and as a local remedy on the other foot as a control is far superior to the latter method.

District Branch Meetings

The Annual Meetings for 1936 have been arranged on the following schedule:

September 17, Thursday—Sixth District Branch—*Ithaca*

September 22, Tuesday—Third District Branch—*Albany*

September 24, Thursday—Seventh District Branch—*Willard*.

October 1, Thursday—Fifth District Branch—*Rome*

October 2 and 3, Friday and Saturday—Fourth District Branch—*Plattsburgh*

October 7, Wednesday—First District Branch—*Morrisania Hospital, New York City*

October 15, Thursday—Eighth District Branch—*Buffalo*

November 19, Thursday—Second District Branch—*Garden City*

us to decide, but irrespective of their etiology, they exist, and because of their etiology, the therapeutic management must vastly vary. It is in the evaluation of the etiological factor in the symptomatology and in the consequent adequate application of rational and understanding therapy that we doctors make or break our reputations.

Naturally the viewpoints of physicians will differ. The ones accustomed to seeing acute illness will not walk in exact step with those whose professional life consists of constant contact with chronic sufferers. The management of the case of lobar pneumonia is far removed from that of pulmonary tuberculosis, and the attitude adopted toward the case of perforated gastric ulcer is vastly different from that assumed in the case of diabetes. All four of these examples are, however, "interesting cases"—the acute medical and surgical emergencies chosen as examples are intensely interesting over a brief period of time, at the end of which the patient is either dead or definitely convalescent. The two chronic medical examples exemplify conditions for which the patient must be supervised for years and toward which a totally different approach is necessary. The environment, social and domestic struggles, etc., are of no importance in the acute emergencies, they loom large in the chronic conditions. What makes the tuberculosis case interesting? In part, the local pathological condition, its improvement or the reverse, in part, the effect of surgical procedure in influencing the diseased process, but most of all the reaction of the personality to the new environment, the psychic struggle that is going on, the combination of resignation and will-to-win, the character-building, that accompany every recovery. Why is the diabetic interesting? Partly because of the diet he can accept, of the gradual increase in carbohydrate tolerance, in the feasibility as time goes on to decrease insulin dosage, in the evidences of general betterment or, in other cases, of gradual metabolic failure. Surely these are all sources of interest, but there are others. The personal enthusiasm of the patient in seeking to understand his own condition, his immense concern over his diet, his self-control in the presence of temptation, his

mastery of a new world composed of carbohydrates, proteins, fats, and calories—his occasional diabetic jags when he "breaks training" and suffers in consequence, in short, the reaction of his entire personality to the soulless demands of a decreased metabolic ability and a consequent lifelong adaptation to a changed mode of life.

No one who has listened to the outpourings of the soul of a tuberculosis patient with his memories of the past, fear of the present and hope for the future can consider such an individual as anything but an "interesting case," nor can anyone who has run the gamut of emotions with a diabetic (many of them, to be sure, purely dietic) fail to realize that in the laying bare of the human element and of the human spirit that sustains the diseased body rest the groundworks of the interesting case. These examples have been chosen as types. They may be varied to suit the individual taste and experience.

Probably the most difficult patient to excite interest is the "chronic incurable"—the individual whose prognosis is absolutely bad and whose outcome depends not upon "if" but upon "when," which is best exemplified in the man or woman of sixty-odd exhibiting symptoms due to hypertension. Here is where the true physician or surgeon must expend himself to his uttermost. A serious illness of his own is a real boon to the doctor. He then sees the reverse of the coin with whose obverse he is so familiar and he gets the viewpoint of the symptom-conscious and of the bedridden, the one who is "looking up," whereas the doctor is always "looking down." I am sure that in our busy days we often fail to fully appreciate just how much visits with us mean to our patients or, sad to say, the reverse. I know that I have left a sick bed with the feeling that my visit had been of real value, even though no change in treatment had been made, and, alas, I also know that I have frequently gone out of a patient's room realizing that my visit had been mechanical and perfunctory. The patient, that day at least, had not been an "interesting case," but the interest inherent in patients is, in the vast majority of instances, dependent upon

tically the only reference to interesting cases in the abstract that I can find in medical literature

The interesting case is primarily one that offers therapeutic possibilities, using the words in the broadest sense. Therapy must include both treating the disease the patient has and treating the patient that has the disease. Most diseases are not in themselves particularly interesting to treat. The things that stimulate the physician are the interaction upon one another of the particular conditions from which the patient is suffering, and the particular type of personality that is being affected by the presence of somatic pathology.

Throughout life in general it is true that the things we know best we find most interesting. Thus, the firmer the grasp we can secure upon all phases of a given patient's condition, the greater interest will that patient evoke. Many of us, in fact most of us, do not get to the bottom of all that a patient can present because we find it practically impossible to give the necessary time to ferreting out details which, when put together, may fill in an important gap. It takes time to consider body, mind, and spirit. It takes patience to discover behavior characteristics, family skeletons, inferiority complexes, thought transferences, various conditions that the patient himself wishes to conceal—it takes far more time and patience than it does to make a careful routine physical examination and to have done, or do, the necessary laboratory work. But painstaking inquiry and tireless investigation will often bring to light a combination of facts that will turn the patient that promises to be a bore, and perhaps a nuisance, into a genuinely "interesting case."

"Interesting cases" are both born and made. Those that are born come under the head of "rare" or "unusual" and, as previously stated, are frequently incurable. There is a certain thrill in making a diagnosis of subacute bacterial endocarditis or of pulmonary carcinoma, but when that is done, what next? Merely the scientific attitude of waiting for proof at the autopsy table, coupled with a sense of futility and frustration and a sort of wonder as to how it is and why it is that we so often come to a dead end and are left

baffled and helpless and hopeless. Then it is that we feel keenly the vain pleading of the patient's loved ones: "Doctor, isn't there something you can do?" How many times have we heard this, and how equally many times have we turned away with a lump in our throats because we could not bear to have to tell the young wife or the aging mother or the desperate father that in truth we could do nothing! The end of these "interesting cases" is sad indeed and makes all of us realize our pitiful limitations.

The interesting case that is "made" is quite another proposition. Here is found a challenge to the physician—not the challenge of life versus death, but the challenge of health versus sickness, of economic solvency versus penury and dependence, of joy and gladness versus gloom and wretchedness. Surely this is a challenge worthy to be met and accepted. As a matter of fact, it is the bounden duty of every physician to meet and to accept it. Unless he does so to the best of his ability he is derelict in the discharge of his professional obligations, and in the acceptance thereof he will experience a sense of happiness and of gratification which nothing else can give.

As a sub-title to this address, I have selected a well-known line of Alexander Pope: "The proper study of mankind is man." This statement applies most particularly to the medical profession. We all know that one of the great lures of our calling resides in the fact that we see human nature bare—in the raw, that we discover things no other class of men discover, that we are the recipients of confidences never given to others, that we carry about in our memories damning proofs of guilt and evidences of the highest type of heroism, and we also know that all these evidences that we receive serve to make the "interesting case."

I would not have you feel that I am pleading that every case should be an interesting one—I have practiced medicine too long to think that. I do feel, however, that all too often we physicians fail in not trying to place ourselves in the position of the patient—an individual who comes to us for relief of symptoms. Whether these symptoms are of organic or of functional origin or both, is up to

be they organic or functional but still there is enough on the surface to urge us to further inquiry, still others, and, I am sure, by no means a small group, present at first sight no elements of interest but appear dull, colorless, and drab. It takes the artist as well as the scientist in medicine to unravel these patient-problems. We lose so much when we fail in our own minds to dramatize medicine—what a drama it presents! "The proper study of mankind is man"—and man in his reactions to disease, to heredity, to environment, to success, to failure, to happiness, to sorrow, to exultation, to fear, do not the consideration of all these factors constitute the practice of medicine, and is there not drama in each element? All of us in our offices have had dramas unrolled before us—the whole gamut of what is presented upon the stage—tragedy, naked and stark, comedy, both high and low, farce, at times, melodrama not infrequently. Why do we so often fail to grasp the significance of the presentation of the whole picture, in its relationship to the functional and somatic complaints, of those whose role is a major or a minor one in the play of human emotions that is depicted to us in narration or more often in unconscious acting as we talk with our patient? Yes! there is drama in medicine and its appreciation and interpretation are potent forces in diagnosis.

The ability to dramatize is a real gift and tends to get one away from that standardization which is so ingrained in this country. The late Dr C Jeff Miller,³ of New Orleans, had this to say:

Perhaps the most characteristic aspect of American civilization today is the trend toward standardization, and American medicine has become infected with the same virus. We have standardized our hospitals and our medical schools and our patients are in all respects the better for it. We have standardized our laboratory methods and our medical and surgical therapeutics and our patients are in many respects the better for it. But we are in a very great danger—I do not use the word lightly—of standardizing ourselves and them and we are both the worse for it. There is a limit to the value of standardization and I greatly fear that we have reached it. I know that it would profit us, and I am sure that it would not lessen our scientific efficiency, to be

more personal and more human in our relationships, to regard as something more than cases and symptom-complexes the ailing men and women who turn to us for aid.

Dr Miller is pointing us toward the art of medicine and indicating plainly that man cannot be standardized and that the study of man in relation to his environment cannot be governed by any hard and fast rule. It is by having no inelastic yardstick that one so often gets at the heart of things and, when the entire situation is viewed in a panoramic way, out crops the interesting case!

Sir William Osler once said that to treat patients without reading medical literature is like sailing an uncharted sea but to read medical literature and not treat any patients is like not going to sea at all. It is thus with the science and the art of medicine. To have science without the art is not conducive to success, to have the art without the science is dangerous to those that are to be treated, though one sees many successful practitioners who get along on an absolute minimum of the science. They know people—"the proper study of mankind is man," and because of their art they help enormously. And again, what is this Art of Medicine that to so many is a will-o-the-wisp ever sought and ever fleeing? Dr Walter C Alvarez,⁴ who always writes so delightfully, has defined it in such simple terms that I must quote him. He says:

What is this Art? I should say that it is the knack of dealing with the patient in such a way as to gain his confidence, his respect and his liking, it is the knack of inspiring him with the feeling that here at last is a man who understands his case and will cure him; it is the knack of keeping his trust even when things go wrong when health and comfort do not return and when perhaps as is the case with many illnesses things continue to go from bad to worse, and it is the knack of making the patient comfortable and of adjusting the prescribed treatment to his particular idiosyncrasies of mind and body.

The physician who has these qualities so well pointed out will give much of himself to his patients, will receive much from them and will find himself surrounded by "interesting cases."

And so, finally, we are as it were turned back upon ourselves, forced to introspection, self-analysis and self-evalu-

what we put *into* the visit rather than what we get *out* of it

All of which brings us inevitably to a consideration of the science and of the art of medicine. We could not do without the science, which has as its cornerstone the diagnosis and treatment of disease, nor could we do without the art, on which depends our estimate of the patient and our management of his personality, and while, because of the science, many cases are intrinsically interesting, because of the art almost every case can present some absorbingly intriguing phase.

In his presidential address before the Tri-State Society of the Carolinas and Virginia in 1932, Dr Beverly R Tucker,² of Richmond, stated "It is the ability, I take it, not only to see the fact or the truth of medical science, but to play one's knowledge, both acquired and intuitive, through the imagination around about, back, above, below, and ahead of the fact or truth, that constitutes the art of medicine." Elaborated, this statement implies that the broader the education of the physician, the more adequately he can solve the problems presented. The statement quoted is that of a neurologist and psychiatrist—it were well if many of us were more neurologically- and psychiatrically-minded. Which of us fails to see so-called "neurotics"? How many of us after dealing with them for awhile turn away from them, dubbing them "nuts" and consigning them and their ailments to limbo! Yet, they represent an element of suffering humanity—the point is to get the key to the lock. Here the physician with the larger aspect, with the greater extra-medical knowledge, with the broader humanitarian culture, will be the most apt to succeed. Too often these unfortunates need but a sympathetic personality that has some grasp (inadequate it may be, but patients put up wonderfully with our imperfections) upon that which holds their interest in life, it may be art, chemistry, religion, architecture, ceramics, poetry, politics or what have you?—but somehow, somewhere, there must be reached a point of contact between the physician and the patient suffering from functional disease, or even between the physician and the patient suffering from organic disease with a functional overflow. Here it is that the

broad-minded versatile practitioner will find a "receptor" where his less fortunate colleague will not.

The type of man that enters medicine with the art as well as the science (and I again quote Dr Tucker) "sees through and around about the patient and becomes 'en rapport' with the whole situation, including the conscious or objective and the subconscious or subjective, with a faculty for the retrospective and a clinical instinct, he goes to the root, or, more often, to the roots, of the malady, he has the indicated laboratory work done and he interprets it in relation to the particular human being he is treating, he allows for technical errors and watches for incongruous findings, he contemplates, meditates, and brings to bear upon the diagnosis his knowledge, his experience, and, unwittingly perhaps, his imagination. Then, and then only, he arrives perhaps with great rapidity, at a tentative solution or at a definite conclusion. He is much more apt to be right than wrong, and if he is wrong, he is usually not far wrong, and he soon puts himself back on the right track. Now, and not until now, he applies his real therapy, and his treatment is not routine but resourceful. He remembers that the best medicine is frequently administered not in a pill or in a teaspoon but by sympathetic understanding and safe advice."

The words of Dr Tucker will apply well to some patients that many of us see and to many patients that some of us see. Why have I quoted these sentences? Because in their essence they give to us the principles upon which is built the "interesting case." If we can look upon our patients other than those that come to us in an acute surgical or medical emergency or those that present the true "rarities" of medicine. I repeat, if we can look upon our patients that come to us day in and day out with the breadth of vision and the imaginative concept supported by Dr Tucker, then truly shall we discover again and again "interesting cases," and in the discovery thereof we will be stimulated and rewarded.

The inherent quality of the "interesting case" is the presentation of a problem to be solved. Some of these problems are so simple and obvious that they stick out like a sore thumb, some are more subtle,

Special Historical Article

MARCUS WHITMAN, PIONEER PHYSICIAN OF WESTERN NEW YORK AND OREGON

FREDERICK C WAITE, Ph D, *Cleveland O*

Professor of Histology and Embryology, Western Reserve University

The present year is the centennial of the first permanent white settlement in Oregon Territory, that vast area west of the Rocky Mountains and north of the forty-second parallel of latitude which was until 1848 the northern boundary of Mexico. That area now contains the states of Oregon, Washington, Idaho, and parts of Montana and Wyoming, and is larger than the area occupied by all the states east of Illinois and north of the Ohio River.

In September 1836 two men, Rev Henry H Spalding and Dr Marcus Whitman, and their wives established permanent homes in Oregon Territory. All four were natives of New York State and Dr Whitman was a graduate of a medical school in upstate New York.

No other physician played so great a part in the early history of the area west of the Rocky Mountains except Dr John Marsh, a graduate of Harvard College in 1826 but who, never having attended a medical school, had learned his medicine from an army post doctor in the middle west. Dr Marsh entered California in February 1836, and was the first American physician in that area. He came to have great influence in the closing years of the Mexican occupation and had a large part in bringing the state of California into the Union.

Both these men suffered violent deaths, Dr Whitman being massacred by Indians in 1847 and Dr Marsh being killed by cattle thieves in 1856.

In the northwest the high place of Dr Whitman in its early history is appreciated and was commemorated by a public celebration at Walla Walla, Wash., August 13-16. It seems timely, therefore, that the members of the medical profession should know something of this pioneer country doctor of western New York.

Birth, Ancestry, and Early Life

On September 4, 1802, in a log cabin in a small hamlet in Gorham township, Ontario County, New York was born Marcus Whitman, the second child of Beza Whitman (1773-1810) and his wife, Alice Green Whitman (1777-1853).

Seventeen years later at the suggestion of the village doctor the hamlet was given its present name of Rushville, commemorat-

ing Dr Benjamin Rush, revolutionary patriot and leading physician of the later eighteenth century.

Marcus Whitman was the seventh generation from John Whitman and Thomas Green, both of whom came from England to Massachusetts Bay Colony before 1640. Between 1770 and 1790 both the Whitman and Green families migrated to northwestern Massachusetts and in 1799 Beza Whitman and his wife migrated to the wilderness of western New York.

Thus in the veins of Marcus Whitman flowed the blood of migrating pioneers. Within two hundred years the Whitman line made four migrations, each time into more distant and sparsely inhabited wilderness—from England to Massachusetts Bay, from Massachusetts Bay to the Berkshires of Western Massachusetts, from the Berkshires to western New York, and from New York to far away Oregon.

In 1810 Beza Whitman died and eight year old Marcus was sent to live with his father's half-brother in Cummington, Massachusetts, a town on the eastern slope of the Berkshire Hills. At the age of thirteen, he went to the adjacent town of Plainfield, and was a pupil in the famous private school of Dr Moses Hallock, which had as pupils such nationally known men as the poet William Cullen Bryant, and John Brown of Harper's Ferry fame.

Marcus Whitman writes that in the school he studied "the English branches, Latin and some Greek." He was ready to enter college and had decided to become a clergyman, when in 1820 he returned to his mother's home in Rushville, N Y. Lack of funds prevented his going on with his education and for a period of five years he worked in the tannery and shoe-shop of his stepfather and in the sawmill of his uncle.

Marcus Whitman Studies Medicine

On September 4, 1823, Marcus Whitman became of age. Up to this time he was subject, as an obedient son, to the wishes of his mother and stepfather which apparently were to direct him into business or industrial pursuits, but now he was his own master.

The entrance to the medical profession did not demand the extensive educational

ation We are forced to realize that we are not a guild apart, set away with our x-ray and our laboratory and our technical terms in a water-tight compartment but that, on the contrary, we are part and parcel of this great flow of humanity, specialists in one of the branches of biology, particularly qualified to do certain things, discover certain things, deduce certain things, specially qualified to diagnose and treat disease, and specially qualified, if we have the right approach, to aid suffering men and women over the rough place of life, to restore a certain number—thank God a large number—to health and vigor, and specially qualified to stand by and ease and comfort those whose lot it is to land upon that shore from whose bourne no traveler returns In so doing we reach heights which no others can scale and we plumb depths which no others can reach

I hope that all of you have read Ian Maclaren's "A Doctor of the Old School" If you have not, you have a rare treat in store for you It ends with the funeral of the well-beloved Doctor MacLure in the presence of practically the entire population of the village of Drumtochty and the glens thereabout The minister, Dr Davidson, has selected the text to be placed upon

his tombstone, it is "Greater love hath no man than this, that a man lay down his life for his friends" Objection is made to this by one of those present because the doctor "didna mak mair profession o' reileigion" Then Lachlan Campbell speaks up and says "When William MacLure appears before the Judge, He will not be asking him about his professions, for the doctor's judgment has been ready long ago, and it iss a good judgment, and you and I will be happy men if we get the like of it."

"It iss written in the Gospel, but it iss William MacLure that will not be expecting it"

"What is't Lachlan?" asked Jamie Soutar, eagerly The old man, now very feeble, stood in the middle of the road, and his face, once so hard, was softened into winsome tenderness

"Come ye blessed of My Father * * * I was sick, and ye visited Me"

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THIS AND THAT, HERE AND THERE

So-called compatible eating is condemned as "the latest dietetic bugaboo which food cranks have devised to frighten the bewildered and glibble public," Dr Clarence William Lieb, New York physician, declares in the August issue of *Hygeia*

Birth certificates on the new forms are required by law after September 1

Nearly 1,000 highway emergency first aid stations have been established by the Red Cross along major travel routes in the past year

Rex Ingram, negro actor who plays *De Lawd* in the "Green Pastures" film, has refused new screen offers and will study medicine.

Some authorities figure that "at least two per cent of the population can be considered definitely feeble-minded," said a recent speaker Personal observation may of course revise this estimate

"The fellow who does a little more than he is paid for, will soon be paid for a little more than he does" Not in our profession, says the Bulletin of an Ohio medical society

If you have a vision for service invest your money in your office instead of the stock market. It will bring you better dividends as a rule—*The Mississippi Doctor*

Examination of children entering school for the first time should be done now by the family physician in preparation for school entrance in September

New Hospital Patient—"Say, doctor, I asked that nurse to put a hot water bottle at my feet and she stuck up her nose and walked away"

Doctor—"What else could you expect? That was the head nurse"

Patient—"Oh, do they specialize that much? Then get me the foot nurse."

—*Illinois Medical Journal*

as a resident in Herkimer County. The date of the certificate is probably the date of the annual meeting of the society. The examination may well have been some weeks earlier. The certificate, which was familiarly called a diploma, is the accompanying illustration.

This document is all printed except the words in italics. The seal probably originally attached on a ribbon has been lost.

Thus on May 9, 1826, at the age of less than twenty-four years, Marcus Whitman became a licensed physician in New York State under the procedure then in force by which the legislature delegated to chartered medical societies the duty of determining the proficiency of candidates and granting them the right to practice.

Four Years in Canada

Following the beginning of the Revolutionary War there was a migration of loyalists from the colonies to adjacent parts of Canada, especially to the area now comprising the Province of Ontario. A favorite goal was the fertile Niagara peninsula, an area about fifty miles from east to west and twenty-five miles from north to south lying between Lake Erie and Lake Ontario*. In 1826 the northwestern part of this Niagara District was Lincoln County, and in it was the township of Gainsboro. Here was a village of about one hundred inhabitants known then as Snyders Mills, but now called St. Ann's.

In this frontier village of Snyders Mills, sometime in the summer of 1826, Marcus Whitman located for practice.

Upper Canada had no medical school until 1843. Until then young men who wished to attend a medical school in a few cases went to England, but most of them went to the United States. Even after the school at Quebec was started in 1824, most of the students from Upper Canada went to the United States because of antipathy of English Upper Canada toward French Lower Canada.

The medical school at Fairfield was the nearest to its border and many of the students from Upper Canada attended this school. In the year 1825-26 when Marcus Whitman was at Fairfield he had several fellow students from Upper Canada. It is

quite possible that his contact with these led him to go to Canada to begin practice.

In 1826 a reliable medical authority in Upper Canada wrote "it is melancholy to think that more than three-fourths of the present practitioners have been educated or attended lectures in the United States" (Canniff, p. 83).

There was no incorporated medical society in Upper Canada until 1839, therefore the method of granting licenses through medical societies in vogue in the United States was not in effect.

In 1818 by act of parliament there was created the Medical Board of Upper Canada, which met first in January 1819. Its duties consisted both of examining former soldiers who applied for pensions and of examining candidates for its license to practice medicine. The act carried a penalty of one hundred pounds for practicing without this license, but this penalty could not have been vigorously enforced since the records of the Board show that in ten years (1819-1828) it examined but eighty-five men. Of these thirty-nine were licensed and forty-six rejected. The total of individuals is not quite so great as several were examined more than once.

Probably on account of this general disregard of the licensing law Marcus Whitman, although he held a New York license, practiced three years without an Upper Canada license as did many other competent men. The records of July 1829 (Canniff p. 56) show that "Peter Schofield of Johnston District, J. E. Rankin of Ottawa District, William McMahon of Hallowell, Marcus Whitman, Niagara District, and John Hutchinson of Port Hope received certificates. One candidate was rejected."

The language "received certificates" when compared with other entries where the language is "passed examinations," indicates that these five men were licensed without examination on the basis of credentials which they held.

Dr. Schofield was a graduate of the college of Physicians and Surgeons of New York City in 1812 and had been in practice in Canada for fifteen years and held public office. Dr. Rankin held a license in Lower Canada. Dr. McMahon had attended Fairfield Medical College in 1829-30 and probably also held a Herkimer County license. Dr. Whitman held a license from New York State and Dr. Hutchinson was a graduate in medicine at both Glasgow and Edinburgh and had been in practice in Canada for ten years.

This license from the Upper Canada Medical Board, since it was issued by

* This area was in what was then known as Upper Canada. At this time Canada was divided by the Ottawa River into Lower Canada and Upper Canada, the terms lower and upper having reference to the course of the St. Lawrence River. Sometimes these two areas were called Canada West and Canada East. In 1867 Upper Canada became the Province of Ontario and Lower Canada the Province of Quebec.

preparation that the Congregational church asked of its ministers A "good English education" was then considered adequate to begin the study of medicine This Marcus Whitman already had With having studied "the English branches, Latin, and some Greek," he was better prepared than the majority of medical students, for few of them in that era attended a college of arts before studying medicine

The usual procedure in medical study at that time was to "read medicine" with some practicing physician for at least a year before attending a medical school It is probable that Marcus Whitman studied under his preceptor for more than a year before he first entered medical school in October 1825 It seems not unlikely that he began his medical study soon after he reached his twenty-first birthday

The village physician at Rushville was Dr Ira Bryant (1783-1840), then forty years of age. He was a cousin of William Cullen Bryant, lawyer, editor, and poet, whose father, Dr Peter Bryant, was the village physician at Cummington during the five years that Marcus Whitman lived in that town as a young boy At Rushville Dr Bryant was a member of the county medical society and practiced until his death

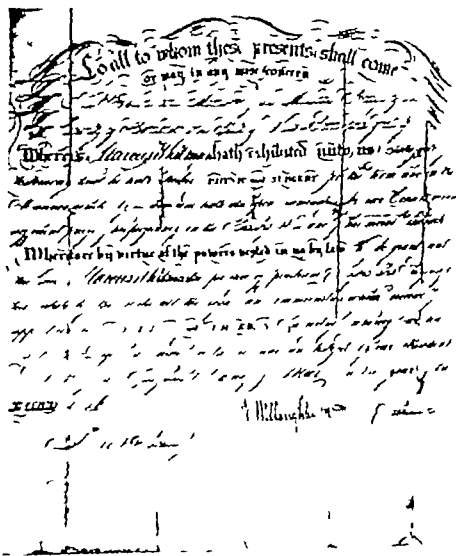
After at least one, and probably two, years of study under Dr Ira Bryant, in early October 1825, Marcus Whitman entered the College of Physicians and Surgeons of the Western District of New York, located at Fairfield in Herkimer County There were a hundred and thirty students in attendance that year The faculty in that year consisted of Doctors Westel Willoughby, Joseph White, Theodorice Romeyn Beck, James Hadley, and James McNaughton All were men of more than ordinary reputation as medical teachers Westel Willoughby, one of the founders of the school in 1812, had in addition to his reputation as a medical practitioner and teacher that of a county judge, a member of the legislature, and a member of Congress

Neither Dr Westel Willoughby (1769-1844) nor Dr Joseph White (1763-1832) had graduated from a medical school When they were young men, immediately following the Revolutionary War, the preceptor method of medical education held nearly complete sway and very few students attended a medical school Their attainments in practice and teaching were testified by honorary degrees of MD conferred on each of them by the regents of the University of the State of New York in 1812 Drs Hadley and Beck were both graduates of a college of arts and also of an American medical school Dr McNaughton was a

graduate in medicine at the University of Edinburgh Dr Beck became noted for his writing on medical subjects, especially medical jurisprudence Dr Hadley came of a scholarly family and his son became professor of Greek in Yale University The late President Hadley of Yale University was the grandson of Dr James Hadley

When this school was chartered in 1812 it received an annual subsidy from the state treasury equal in amount to that given to the College of Physicians and Surgeons of the Southern District of New York in New York City Because of the cumbersome and similar names of these two schools the upstate institution was usually called the Fairfield Medical College, although that was never its legal name

Marcus Whitman attended the Fairfield Medical School through the session of 1825-26 and soon after the close of its session passed the examination for license before the censors of the Herkimer County Medical Society He did not become a member of the society since he did not remain



To all to whom these presents shall come/
or may in any wise concern/
The President and Members of the Medical Society
of the County of Herkimer and State of New
York send greeting/
Whereas Marcus Whitman hath exhibited unto us
satisfactory testimony that he hath studied Physic
and Surgery for the term and in the Manner di-
rected by Law and hath also upon examination by our
Censors given sufficient proof of his proficiency in the
Healing Art and of his moral character/ Wherefore
by virtue of the powers vested in us by law We do
grant unto the said Marcus Whitman the privilege
of practising Physic and Surgery in/ this state to-
gether with all the rights and immunities which usu-
ally appertain to Physicians and Surgeons
In witness whereof we have/ granted this Diploma
sealed with our seal and testified by our President/
and Secretary at Fairfield this 9 day of May in the
year of our LORD 1826

M Johnson Secretary W Willoughby MD President

became Professor of Botany and Zoology at the University of Michigan, being the first man appointed to a professorship in that institution. In 1842 he became the distinguished Professor of Botany in Harvard College, and later a noted author.

Daniel Brainard, who became the most distinguished surgeon of the middle-west and founded Rush Medical College, was a student at Fairfield for one year, but took his second course of lectures at Jefferson Medical College where he graduated in 1834.

Nathan Smith Davis was graduated in 1837. He became the first professor of Physic at Rush Medical College and later came to be known as the father of the American Medical Association, the organization of which he initiated in 1846.

Alonzo Benjamin Palmer, the founder of the medical department of the University of Michigan, was graduated at Fairfield in 1839.

There was no other medical school of that period that could have prepared Dr. Whitman so well for his subsequent career, for this school gave especial attention to training men for medical practice in frontier locations. Its graduates are found among the leading practitioners of the advancing frontier from 1820 until after the Civil War and many achieved service of high merit, both in practice and in medical education.

Any inference that Dr. Whitman's medical education was inferior is unwarranted. It was in as good a school as that period afforded, and under as competent a group of teachers as was then found anywhere in the United States. Moreover his medical education was pursued in what was then considered the very best sequence, namely, first reading medicine with a practitioner, which included some assistance in the preceptor's practice, then attendance at a medical school, followed by a period of independent practice, and then return to the medical school where the experience of practice would make the instruction much more effective, and finally graduation. Dr. Whitman was a well-trained physician for his times, much above the average, both as to preliminary and as to professional phases of education.

Practice at Wheeler, N. Y. (1832-1835)

Immediately after graduation from the medical school in January 1832, Dr. Whitman located for practice at Wheeler in Steuben County, New York, nine miles north of Bath, the county seat.

This village of about one hundred inhabitants is twenty-five miles south of Rushville, Dr. Whitman's birthplace. Settled in 1803, it lies in the narrow valley of Five-Mile Creek, a tributary of the Cohocton River. Here at Wheeler Dr. Whitman practiced for three years from 1832 to 1835.

A visit to this village in July 1935, disclosed that the building said to have been occupied by Dr. Whitman as an office is still in use now as a private garage. It has been moved from its original site which is now marked by a large granite boulder on which the Daughters of the American Revolution* have placed a memorial bronze tablet reciting some of Dr. Whitman's career. It bears in relief a prairie schooner drawn by a pair of cattle and led by a pioneer, which is a representation of Dr. Whitman, but is idealistic since no authentic picture of Dr. Whitman is known to exist. Unfortunately the dates (1828-1835) on this tablet are erroneous. Dr. Whitman was practicing in Canada in 1828 and convincing evidence shows he did not locate in Wheeler until the Spring of 1832.

On a Missionary Expedition

Much has been written about his career after 1835, but very little about his early life, and nothing about his medical education and practice that is correct. Some authors give the date of his medical graduation as 1824, naming no institution. Others name him as a graduate of the Berkshire Medical Institution at Pittsfield, Mass., which was not founded until three years after he left that state permanently.

Of the several books and the various published articles about this man, the majority have been written by clergymen. They emphasize the religious phases of his career, but give scant attention to the medical side.** There is much romancing in some of the writing about his ride to Washington in 1842. The greater part of what precedes in the present article has never been printed, and apparently has been unknown.

His inheritance from a line of pioneers, his participation in several trades, including tanning and milling, both of lumber and grain, his several years of medical practice in frontier villages—all this developed self-reliance, hardihood, and resourcefulness, which added to innate inventiveness, and combined with his medical skill, speedily established his reputation with western immigrants and Indians. Primarily he was a capable pioneer physician. The religious elements in his career appear to be secondary to his medical pioneering as basic causes of his accomplishments from 1836 to 1847.

* Dr. Whitman's maternal grandfather, Hezekiah Green, was a Revolutionary soldier.

** A new biography of Dr. Whitman based upon much new source material and giving adequate attention to the medical phases of his life is now in course of preparation by Rev. C. M. Drury of Moscow, Idaho.

British authority, may well have been of especial value to Dr Whitman later in his contact in Oregon with the Hudson Bay Company officials

In 1801 Daniel Ward Eastman (1778-1856) went to the Niagara peninsula as a licensed missionary. He was a native of Orange County (New York), and was ordained in 1802 by the Presbytery of Canandaigua. Mr Eastman established seven Presbyterian churches in the Niagara District, one of these in Gainsboro near the present hamlet of St Anns. The log church erected in 1802 had been replaced by a frame church in 1825, a year before Dr Whitman located in the village. Dr Whitman transferred his church membership from Rushville to this church. Since the early records of this church are lost the exact date of transfer cannot be determined.

Mr Eastman was an able minister. Whether it was due to his influence or to a recrudescence of earlier desires, in 1830 Dr Whitman again determined to study for the ministry. In the autumn of that year Dr Whitman left Gainsboro and returned to Rushville. The date can be approximated by the record that he was received back into the church at Rushville on letter from the church at Gainsboro on November 6, 1830.

Beginning shortly before this date there was a considerable invasion of Thomsonsians from the United States into Upper Canada. Their incompetence brought all physicians coming from the United States into disrepute and there arose a definite antipathy to "doctors from the States." This may have been a contributory cause for Dr Whitman leaving Canada.

A visit in July 1935 to Gainsboro and St Anns revealed little that was there in the four years from 1826-30 when Dr Whitman was in medical practice. The hamlet, surrounded by a farming country, is yet smaller than it was a century ago. No building that was then standing now exists. Remains of the old mill dam are evident. The church building of Whitman's time was replaced over seventy years ago by the present structure. In the church yard opposite is a monument to the Reverend Daniel Ward Eastman who must have been intimate with Dr Whitman during those years.

Again in Rushville (1830-1832)

On return to Rushville the pastor of his church was Joseph Brackett (1781-1832) a graduate of Williams College in 1815. Under Mr Brackett, Dr Whitman, now twenty-eight years of age, again took up the study of Latin and other subjects look-

ing toward the ministry. This continued for about a year until the autumn of 1831, when the plan was dropped. Dr Whitman says this was due to his own ill-health, having a pain in the side and some difficulty with the spleen. There is an additional reason in that at this time Mr Brackett's health failed and he died in 1832.

No evidence has been found as to whether Dr Whitman practiced medicine in Rushville during the year of 1830-31. His name does not appear in the lists of members of the medical societies of either Ontario or Yates County (Rushville lies partly in each of these two counties).

In October 1831 Dr Whitman again entered the Fairfield Medical School and was graduated with the degree of Doctor of Medicine on January 31, 1832. The catalogue of that school shows him listed as a practitioner without a preceptor. The subject of his thesis was "Caloric."

The faculty was the same as when he had attended six years earlier, except that the professor of surgery, Dr Joseph White, had retired in 1827 because of age and was succeeded by Dr John Delamater. Dr Delamater (1787-1867), born in Chatham, N Y, was one of the most successful and distinguished medical teachers of the first half of the nineteenth century. He held professorships in eight different medical schools (Berkshire, Fairfield, Bowdoin, Willoughby, Dartmouth, Medical College of Ohio, Franklin (St Charles, Ill.), and Geneva) between 1823 and 1843 in which year he became the founder of what is now the School of Medicine of Western Reserve University at Cleveland, O.

The Fairfield Medical School was at the highest point of its career in the years from 1830 to 1835. Founded in 1812 by Westel Willoughby, James Hadley, Lyman Spalding, later the author of the first American Pharmacopeia, and George Cheyne Shattuck, long professor of Physic in the Harvard Medical School, it had continued to maintain a highly competent faculty. Its reputation had steadily increased and from 1825 to 1834 it was third in point of attendance in the United States, being led only by the schools at the University of Pennsylvania and at Transylvania University (Lexington, Ky.). In 1831-32 when Dr Whitman was there the attendance was two hundred and five, the largest in the school's entire history, sixty-nine were graduated in January 1832.

Among its students were many men who later achieved national distinction. There is room to name but four, all natives of New York state.

Asa Gray was graduated in 1831. In 1838 he

Dr Whitman, Medical Missionary

Dr Whitman and Mr Spalding and their wives joined the caravan of the Summer of 1836 and, crossing the mountains, arrived in the Columbia River Valley in September. These two women were the first white women to cross the Rocky Mountains, while Dr Whitman was probably the first graduate of an American medical college to cross the Rocky Mountains—certainly the first to settle in the Oregon Territory.

Dr Whitman established a station near the present site of Walla Walla Wash in the valley of the river of that name, and Mr Spalding established a station about a hundred and twenty miles distant in the Snake River Valley, at a point now in Idaho. The Whitman station became an important point on the Oregon trail to such extent that it appears on the maps published in the following years, named as "Dr Whitman's," and is the only station on the Oregon trail named on maps published in 1847, except the army forts.

In his eleven years at this station Dr Whitman endeavored to fulfill all his duties as a religious missionary but it was his medical service that appealed fully as much or more to trappers, traders, immigrants and Indians.

Dr Whitman and Mr Spalding strove not only to convert the Indians to their religion, but also to educate them and teach them agriculture and other pursuits, and soon gained their confidence. Other missionaries came and other stations were established. Some differences of opinion arose among the missionaries and in 1842 Dr Whitman decided to return east to make certain representations to the Board of Commissioners for Foreign Missions under the direction of which they were working.

Dr Whitman's relation to the Oregon question

Beginning about 1840 there arose public discussion as to the final allegiance of the Oregon Territory, then jointly administered by the United States and Great Britain.

Dr Whitman, knowing by personal observation of the fertility and natural resources of this territory, believed the United States should acquire it, and when he came

east late in 1842 he went to Washington and urged upon public men including President Tyler, Daniel Webster, then Secretary of State, and members of Congress, that provisions should be made to settle this territory by citizens of the United States.

He returned to Oregon in 1843 as one of the guides for the first considerable emigration of settlers from the East to that territory, consisting of about eight hundred people.

In the four succeeding years this emigration to the Oregon Territory increased until in 1847 it included over three thousand people. This large incoming of white people excited the Indians who feared they were to be driven from their lands as the Indians of the East had been. They were led to consider Dr Whitman a major factor in the incoming of the whites and this, together with some minor personal disputes and incitement of the Indians by opponents of Dr Whitman, were the causes for an attack by members of the supposedly friendly tribe of the Cayuse Indians, upon the Whitman station on November 29, 1847, when Dr Whitman and his wife and several others were massacred.

Thus in 1847 at the age of forty-five years died a pioneer physician with a remarkable career and he rose to the status of a martyr.

His name is commemorated in the State of Washington by a monument at his place of burial on the site of his mission station at Waiilatpu, by the name of one of the eastern counties of that state, and by Whitman College, established at Walla Walla in 1866 as Whitman Seminary and developed into a college in 1880.

In New York State there are commemorative tablets to Dr Whitman at his birthplace in Rushville, at Wheeler where he practiced three years, and at nearby Prattsburg which was within the sphere of his practice and where his wife was born.

All these commemorate a capable and brave pioneer physician of New York who served well his generation and whose career is an honor to American medicine of the nineteenth century, a man who fully lived up to the best traditions of the profession and whose name is historically a salient part of the story of the settlement of the Northwest.

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Influenced during boyhood by an environment of religion, piety, and some degree of scholarship, he came to desire a professional career. His first choice was the ministry, and then medicine. That he was later able to combine these two services as a pioneer medical missionary in the remote northwest arose from a series of events in which he had no part until 1835.

Due to a series of circumstances, the American Board of Commissioners for Foreign Missions offered in 1833 to send missionaries to Indians in the Oregon Territory if someone willing to go could be found.

In 1834 Samuel Parker (1779-1866), a graduate of Williams College and of Andover Theological Seminary, offered to go. He was at that time a resident of Ithaca, N. Y., and was supported in part in this venture by the Presbyterian Church of that town. For twenty years he had been a missionary and pastor in western and central New York so that he was well known in that region. Mr. Parker wished a companion, preferably with some medical knowledge. In speaking in various churches in Western New York before going, he met in November 1834 Dr. Whitman, then in practice at Wheeler.

Dr. Whitman, then thirty-two years of age, agreed to go with Mr. Parker and in the Spring of 1835 they joined the annual supply caravan of the American Fur Company which started in May of each year from the Missouri River to the "rendezvous" just beyond the continental divide where, by prearrangement, it met trappers, and Indians. Each year this caravan carried a year's supplies for the trappers of that region, and after a period of trading at the rendezvous, returned in the late Autumn to St. Louis with its load of furs.

Caravan men could not be expected to be greatly in favor of missionaries or in especial sympathy with their points of view. Mr. Parker, who had had little experience in pioneering, was soon in disfavor with the caravan.

Just as the caravan was ready to leave Council Bluffs early in June there was an outbreak of "spasmodic cholera" among the members of the caravan, for the Asiatic cholera epidemic of 1832 and 1834, had reappeared in the Mississippi Valley. Dr. Whitman, the only physician at hand, was able to save all but three of those attacked, and immediately won the favor of all the caravan.

The rendezvous was appointed at different places in different years. In 1835 it was at the crossing of Green River about a hundred miles west of the summit of South Pass at a point now in southwestern Wyo-

ming. The caravan arrived there August 12. It was met by about two thousand Indians and two hundred white trappers and traders. Among these was James Bridger (1804-1881), then the most noted guide and scout of the Rocky Mountain region. Bridger had embedded in his back an iron arrowhead three and a half inches long which he carried for three years. Dr. Whitman removed this and also an iron arrowhead over two inches long from the shoulder of another of the trappers.

The Indians looked on meanwhile with countenances indicating wonder and in their own peculiar manner expressed great astonishment. His reputation being favorably established, calls for medical and surgical aid was almost incessant. (Parker p. 79)

These two operations gave Dr. Whitman a surgical reputation throughout the Rocky Mountain region among both whites and Indians.

The incident made a lasting friend of Bridger, so much so that he later sent his half-breed daughter to Dr. Whitman's mission school, and Bridger was at that time the most trusted and influential white man in the Rocky Mountain area.

It appears that it was the medical and surgical service of Dr. Whitman in the caravan, supplemented by the dramatic episode of the two operations at the Green River rendezvous that gave him the initial prestige with both white men and Indians that enabled him to accomplish so much in the following years.

After conferences at the rendezvous with both whites and Indians it was decided that Mr. Parker should go on with the Indians and that Dr. Whitman should return to the East to seek more missionaries. On August 21 Mr. Parker started westward and arrived in the Columbia River Valley in September. Dr. Whitman remained at the rendezvous and returned with the caravan, reaching St. Louis in early November.

He had difficulty in finding recruits to go as missionaries to the Oregon country, but finally in February 1836 he persuaded Rev. Henry H. Spalding to accompany him. Mr. Spalding, a graduate of Western Reserve College (Hudson, Ohio) in 1833, and a student at Lane Theological Seminary (Cincinnati) for two years following, was a native of the town of Wheeler, N. Y., where Dr. Whitman had practiced medicine. Mr. Spalding had also studied medicine to some extent, but had not attended any medical school as a registered student, although while in Cincinnati from 1833 to 1835 he had attended some of the instruction at the Medical College of Ohio, as did many of the students of the theological seminary.

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- In addition to the foregoing references various documents in manuscript have been consulted, including extant letters written by Marcus Whitman and Samuel Parker, church records at East Bridgewater, Cummington, and Plainfield, Massachusetts, St. Ann's, Ontario, and Rushville, Prattsburg, and Wheeler, N Y town records in Cummington and Plainfield, Mass., and county records of Ontario, Steuben, and Yates Counties, N Y also various contemporary newspaper files and tombstone inscriptions in these towns

BETWEEN MENTAL HEALTH AND MENTAL DISEASE

B LIBER, MD, DR.PH., *New York City*

Editorial Note Under this title will appear short summaries of "transition cases" from the service of this author in the New York Polyclinic Medical School and Hospital The descriptions are not complete clinical studies, but will accentuate situations from the point of view of individual mental hygiene such as crop up in the every day practice of medicine

A Comedy of Errors

Here is a story that is as twisted as a dime novel and was as hard to unravel as a detective tale But, of course, I shall not give more than the high lights, although even so it will be seen that our work is quite fallible as in this case it almost failed completely

A young man was brought to the office and no one could explain the reason for his condition Only after much and often roundabout questioning it was learned that he was in love with a very good looking and bright girl and that she paid no attention to him There was nothing exceptional in this Didn't the poet sing about how natural it is that when "she" is lovely "he" must love her, but that she cannot care for him because he is not? '*Das ist eine alte Geschichte*,' the lyricist says further, but it is always new and to whomsoever this happens his "heart will break in twain."

But in our case it was not the heart only, it was the brain

He was badly depressed and assumed the attitude and conduct appropriate to that state. He did not and could not work. If he ate it was only because his folks forced him He who used to be careful about his appearance now paid no attention to his person He walked out of the house when chased from his bed by his family and drifted aimlessly the whole day until picked

up by one of his brothers His personality was being disintegrated, his relationship to the world was almost non-existent, he decayed from day to day

The girl was hunted up and she was asked about him

She—not to love him? Why, she could not breathe without him! He was her all She tried to meet him, but he seemed to hide Not a trace of him What had she done to him?

It was a true "comedy of errors"

When he was told about her love for him, he did not believe it. But this news awakened him from his quasi-trance and he became again interested in life around him, which was a good beginning, perhaps the first step toward a restoration to normal However, this period was of short duration and at further sessions he changed altogether, not his behavior, but the apparent motive for it.

He was no longer fond of his girl He was indifferent to her, as if he had never met her How could he be in love with anyone? Life meant nothing to him As far as he was concerned the world might disappear at once.

There was something wrong somewhere His new position did not fit into the picture

This time it was she who did not believe him It could not be. They had been

sweethearts for years. They were to get married at the time when he became sick. The wedding date had been set and even the honeymoon trip had been planned. He had arranged for a vacation from his work for that purpose. No, it was not possible. It could not be true.

She tried to find out the sentiment of the family. There was no objection to the marriage on their side. What was the reason for her "boy friend's" contention that "he had no use for her?"

One day our patient presented himself at the psychopathic ward of a hospital for admission. That, of course, would have ended my work with him and would have sealed his fate, at least for the near future.

But one of the patient's brothers learned about this event in the nick of time and

took the boy home and then to my office.

This time I succeeded in getting some answers which he had been reluctant to give in the past. And I learned the entire secret in a nutshell.

Patient thought he was sexually impotent and was ashamed to get married and also was afraid of ruining his girl's life.

Now he confessed that he still loved her ardently and that he had avoided her purposely so that she might find somebody else. It was a heavy sacrifice on his part.

The rest was easy.

She agreed to take him as he was, to accept him even if he were truly impotent. She was instructed to encourage him. But he soon proved to be able to function normally and they are one of the few really happy couples and contented parents.

Paranoia

A married workingman who always earned a living for his family begins to complain about several symptoms and neglects his job.

He claims to have a *pain* in one of his legs, then in his right shoulder, later in his neck and occipital region. He sees several physicians and is treated in many ways.

Examinations from all points of view show nothing definite.

A year later he falls into the hands of a psychiatrist who digs into his mental state. Then the situation begins to clear up, at least partly.

It appears that a friend with whom he drank together had given him something which made a profound change in his health. The proof is, "Don't you see how much weight I have lost?" And "It is a fact that only since that particular evening I am this way, unable to work and cranky and full of pains. I used to be a good husband and father. Now I cannot stand my children's noise when they play and I hit them with the strap."

When he is told that work would be of help to him, he says he must first be healthy, then he'll be able to work.

We all are acquainted with patients who claim to have been poisoned or to suffer from the fact that an enemy has cast a spell over them.

The cause differs in each case. So far, neither an analysis nor a biography of this patient has yielded the explanation of his

condition. Possibly future work with him will throw some light on the etiology of his case.

But meanwhile he has not been neglected.

All the treatments for his physical "pains" have been discarded, which was a heroic measure. It was reasoned that if he balks at this modification of the doctor's behavior, he will never return and that might as well be so. If he accepts it, a breach into his mental disturbance might be possible. He had been spoiled by over-attention and over-treatment and the more he received, the more he was convinced of the gravity of his somatic sickness.

He stayed away for some time, but came back and he was told bluntly that there was nothing the matter with his limbs and blood and heart. He was shown that if he had been poisoned his system had long since rejected the virus. He was told about the resistance and the defenses in the human body and he was ordered to ignore his "pains" and "aches," even if he actually felt them.

And, in spite of what other psychotherapists might say—let them believe it or not, as it were—it worked. Results were not seen overnight. Many talks were necessary. Some of the lessons had to be reiterated again and again. The patient's obstinate objections and "proofs" had to be removed. But finally full confidence was won and suggestion had its effect.

611 W 158 St

CONNECTICUT CLINICAL CONGRESS

The twelfth Clinical Congress of the Connecticut State Medical Society will be held at New Haven on September 22-24. Physicians outside the State may receive

announcements by addressing the chairman of the committee on publicity and registration, Maurice J. Strauss, 41 Trumbull St., New Haven, Conn.

NEW YORK STATE JOURNAL OF MEDICINE

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EDITORIALS

During the Lull Before the Storm

The social security program seemingly reached a period of non-activity, and the public press and the oracles of various phases of social security have lately been ominously quiet on the question of the medical phases of the so-called social security program.

In teaching military strategy it is customary to put one's self in the enemy's place, and ponder what action he is apt to adopt when faced with the instant situation. Since we are opponents of compulsory health insurance for reasons which are too well-known to need reiteration, not the least of which are the inferiority of medical care and the controlling lay bureaucracy it inevitably brings in its train, then it behooves us to consider what our opponents are doing from the strategic standpoint to persuade the American mind that it has not yet achieved social security in any satisfactory degree unless and until it adopts compulsory health insurance.

We conceive the idea that from now on there will appear in the press of our country, articles and books, all with the idea of persuading America to accept cheap medical service in lieu of adequate wages to buy good service, to tempt the younger medical men with a definite financial return in exchange for the intellectual adventures which working out a career

entails, to exchange the medical development of the individualistic doctor for a paid government agent with skill in departmental diplomacy to hold his job, to exchange patients in whom the doctor is interested for public charges who are just so much income and not much more.

We are led to these observations by the appearance of the first of such attempts in book form, "Security Against Sickness" by I S Falk, M D, Health Consultant of President Roosevelt's Committee on Social Security.

The Medical Society of the State of New York is not in partisan politics. Each of its members belong to the political party of his own choice, and votes for whatever ticket he pleases. We do not want our statement to be taken as containing political implications, yet the appearance of Dr Falk's book is, we predict, but the beginning of a flood of such literature with which we shall be inundated in the near future. In the Book Review of the *New York Times* of August 16, 1936, a very sympathetic reviewer, Rose C Feld, ends her review with the statement that Dr Falk's conclusion is unequivocal,—"Not one country which has tried it (compulsory insurance) has given it up." *This statement is not unequivocal.* In the first place, in most countries abroad, compulsory health insurance gave something

better than those countries had before. This would be untrue in this country. Lastly, and this is perhaps most important—the lay personnel exceeds the medical personnel in ratios from three to five or more. Grover Cleveland invented a phrase which aptly applies here,—“The cohesive force of public plunder***” Is it conceivable that a machine, numbering many thousands, the majority of whom would be non-medical personnel, would anywhere so far forget self-interest—their interest in the payroll—to take any steps to abolish themselves and their political jobs? Anyone who thinks will know why no country, once having established this kind of political bureaucracy, could ever break away from it.

The propaganda departments of those who wish to foist health insurance upon us must give us something better than this! Dr Falk's book contains nothing new. His position has long been known. Perhaps he may be regarded as a sort of “keynoter” for that which we fear will come upon us from the propaganda experts in various governmental and sociological centers.

This part of the so-called campaign of “adult education” has only started. We are not sure that Dr Falk's book is the real break in the “calm preceding the storm,” but it may be. We seem to see the ripple on the calm water presaging the “wind” which will be upon us. Time to make everything snug, and prepare to “ride it out.”

An Early Start

Within the next month or so, thousands of young men and women will be entering medical college as a prelude to the practice of healing. Under the existing curriculum they will receive a thorough grounding in the basic sciences, a smattering of practical experience but almost no training in the sociological and economic principles which will govern their future life.

That phase of medical education is left almost entirely to the medical societies and

rarely begins until the physician has been engaged in private practice for some months or even years. Obviously the preparation for a professional career would be more complete if the extra-scientific aspects of medicine were made clear before the student is actually precipitated into practice. Since the colleges are apparently reluctant to assume this responsibility, organized medicine should do so.

An alert county medical society is indeed one of the best classes the undergraduate student can attend for a realization and understanding of the economic problems of his chosen profession. Here are threshed out the practical difficulties that beset the practitioner. Here the remedy is sought in discussion, experiment, and united action.

The medical student has a definite place in organized medicine. The earlier his contacts with his profession begin, the sooner will he be ready for effective participation in its affairs. Every county medical society that has a medical school within its district should make a strong effort to bring undergraduates to its meetings in preparation for subsequent membership.

Consistent Standards

The requirements governing different departments of medical practice are not always consistent. Standards for similar types of work may vary, or, as more frequently happens, there are discrepancies between standards and their actual application.

In the question of intern education, for example, a definite inconsistency can be observed. Although only graduates of Grade A schools may apply for licensure in New York State, a recent survey revealed about fifty graduates of unrecognized medical colleges interning in various institutions. This means that certain hospitals, with the sanction of the Department of Welfare, are permitting men to practice under their aegis who would not be qualified even to apply for a license in this state.

The whole question of permitting interns to practice without a license is one that might profitably receive further study by the medical organizations and educational agencies of the state. At the present time less than half of the physicians interned in New York are licensed to practice here. These figures are sufficiently impressive to warrant official consideration. In the meantime, regardless of this issue, the Department of Welfare should revise its regulations to conform to the standards set by the Board of Regents, so that only graduates of approved schools may be permitted to intern in this state.

The Nurse Anesthetist

At the last meeting of our State Society, a resolution was adopted, the general purport of which consisted of seeking legal means to curb the administration of anesthetics by nurses. It is a recognized fact that more and more of our hospitals and surgeons have resorted to employing nurse anesthetists, during the past decade, in preference to medical anesthetists.

It might be interesting to review the rise to favor of the nurse anesthetist. Concerned during the World War, when the civilian population was sorely in need of trained medical anesthetists, they filled a gap and performed their work efficiently and conscientiously. They proved to be able technicians and quite capable of satisfying the ordinary requirements of the surgical team.

During the post-war age of specialization, anesthesia as a specialized field of medicine was not only neglected but, what is more important, sadly overlooked. Very few recruits could be induced to make the field of anesthesia their life's calling since the other branches of medicine were far more lucrative. Consequently, there remained for the routine administration of anesthetics the inexperienced intern, the young physician who gave anesthesia to earn a few dollars, and the trained, experienced nurse anesthetist. It was only natural, therefore, that the surgeon and the hospital should turn

toward the latter in order to insure the utmost safety for their charges.

Since the depression medical men are realizing that they have relinquished a remunerative field. How to regain it is our concern. To legislate it into existence, without being able to supply the public with a sufficient number of competent medical anesthetists, will not meet with popular approval. We should first establish recognized courses in this specialty and train the required number of experts to replace the lay technicians. In addition, with the highly complicated hospital system as it exists today, wherein the presence of an anesthetist is needed constantly, we must be prepared to render the same type of service as does the nurse anesthetist. It is highly probable that the medical anesthetist of the future will be on a full-time basis as is now the laboratory personnel.

Raw Apples for Diarrhea

Diarrhea is one of the most frequent conditions of infancy and early childhood. Its causes vary from simple dietary indiscretions to the most severe forms of bacterial infection. In 1929, Moro¹ reported the value of a restricted diet of raw apples in combating infantile diarrhea. He was later corroborated by Heisler,² Brunberg,³ Mayloth⁴ and others.

Borovsky⁵ reports upon twenty-three cases of enteral and parenteral diarrhea with uniformly good results in all after this diet had been followed for from fourteen to forty-eight hours. The quickest response was obtained in infants suffering from acute diarrhea. The apple is peeled and mashed and is then fed to the infant in doses of one to two tablespoons every two hours. All other foods, with the exception of weak tea or water, should be excluded.

The beneficial effects of this type of diet in the diarrhea of infancy and childhood

¹ Moro E. *Klin Wchnschr* 8 2414, 1929

² Heisler, A. *Acta Pæd*, 11 379, 1930

³ Brunberg, T. L. *Am J Dis Child* 45 18, 1933

⁴ Mayloth, G. *Klin Wchnschr* 10 1159, 1931

⁵ Borovsky, M. P. *Ill Med Jour*, 70 174, Aug 1936

are due to the adsorbitive faculty of the pulp which enmeshes the bacteria and the pectins which regulate the hydrogen-ion concentration.⁵ From the practical standpoint, it would appear from the various reports in the literature that this simple therapeutic measure excels all others in obtaining uniformly good results

CURRENT COMMENT

"CERTAIN POLITICAL DOCTRINES, more in favor at present than at any previous epoch, have a tendency to wish to subordinate all the activities of a nation to control by the central government. Using 'social progress' as a pretext, physicians would be obliged to care for the sick only at the command of state officials who have elaborated regulations which are incompetent from the medical standpoint. Now, experience in France has shown that it is the patient who suffers from making medicine subservient to bureaucrats. The protagonists of state medicine will not suffer, because they know how to escape such a maladjustment of the practice of medicine. Workers of all classes will pay for these experiments of futurist medicine by inadequate service if the medical profession does not rise up and make an organized effort to check the threatened invasion. *** Many young physicians, faced with the difficulties of earning a living in private practice, regard bureaucratic medicine as a means of escape, because the hours are limited, there is less individual responsibility, vacations are paid and there is a prospect of a pension on retirement. Such recent graduates have made the struggle against state medicine difficult in France. They do not understand that they are giving up their professional independence and thus are unable to give their patients the care which a personal relation without bureaucratic dictation demands."—We have quoted in part from a message of considerable significance which was contained in a letter from the Paris correspondent to the *J.A.M.A.* of August 8

"SOCIETY HAS ONLY two methods of fighting antisocial activities, the first being the easiest and the usual way, namely, treatment by governmental compulsion, through police methods which is, in short, treatment

by fear of punishment. The second method is by education. This is finer, and like all fine things—rare."—Dr. Frederic J. Farnell in the July 15 issue of *Medical Record*

DENOUNCING THE METHOD in which a good deal of the federal relief money has been distributed, Albert Shaw, in the August issue of the *Review of Reviews* states that "It has contributed more than any other one thing to the enormous expansion of the public debt, while also furnishing an excuse for new burdens of taxation. We are not prepared to believe that a helter-skelter, hand-to-mouth distribution of relief money by the billions of dollars can stand any test of analysis and criticism. Congress ended its session with the further appropriation of almost a billion and a half, to be handled by the WPA, without restraint upon overnight whims under campaign pressure on the part of necessitous politicians. Federal relief as thus administered had become nothing less than a racket, of colossal dimensions, in the hands of politicians, and of a greedy army of spoilsmen wearing the hypocritical garb of 'social workers'."

"THE HEALTH ORGANIZATION of the League of Nations compiles vital statistics for most of the world. The most improved statistical technic is used to make these figures comparable. If it is possible to provide better medical service to the mass of the people by means of compulsory sickness insurance than through the private independent practice of medicine, that fact should in some way be reflected in these statistics." The foregoing is from an article on "Vital Statistics in Sickness Insurance" in the medical economics section of the *J.A.M.A.* of August 15. The article continues with some very revealing figures, all taken from the Annual Epidemiological Report of the League of Nations, and concludes with the statement that "The fact that by all these tests the countries without sickness insurance consistently make a better showing than those in which a large percentage of the population are cared for under insurance systems would seem to justify the conclusion that the people generally receive a better medical service where private practice is maintained than where the physicians are required to practice under insurance regulations."

COUNTY SECRETARIES' CONFERENCE

The Annual Conference of County Secretaries will be held in Albany on Tuesday, September 15, at 10 00 A.M. at the DeWitt Clinton Hotel

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A sound knowledge of physiology, biochemistry, pharmacology, anatomy, bacteriology, and pathology, in so far as they apply to disease is regarded as essential for continued progress of the individual who practices internal medicine. The mere factual knowledge of medicine and its basic sciences is not sufficient. The candidate must have had training in their use in furthering his understanding of clinical medicine. This implies practical experience under the guidance of older men who bring to their clinical problems ripe knowledge and critical judgment. Preparation to meet this requirement adequately may be even more difficult to obtain than the so-called scientific training. It may, however, be acquired in the following ways

- (a) By work in a well organized hospital outdoor clinic conducted by competent physicians
- (b) By a prolonged period of resident hospital appointments likewise directed by skilled physicians.
- (c) By a period of training in intimate association with a well trained and critical physician who taken the trouble to teach and guide his assistant rather than to require him only to carry out the minor drudgery of a busy practice

4 The Board does not consider it to the best interests of internal medicine in this country that rigid rules as to where or how the training outlined above is to be obtained. Medical teaching and knowledge are international. The opportunities of all prospective candidates are not the same. Some may have the opportunity of widening their knowledge by a period of study abroad. Others, at the other extreme, may be restricted to a comparatively narrow geographic area and their detailed training must be obtained in short periods scattered over a long time. Although it is laid down that at least five years must elapse between the termination of the first interne year and the time when the candidate is eligible to take the examination, a longer period is advisable. The Board wishes to emphasize that the time and training are but means to the end of acquiring a broadness and depth of knowledge of internal medicine which the

candidate must demonstrate to the Board in order to justify it in certifying that he is competent to practice internal medicine as a specialty. The responsibility of acquiring the knowledge as best he may rests with the candidate, while the responsibility of maintaining the standard of knowledge required for certification devolves on the Board.

METHOD OF EXAMINATION

The examination required of candidates for certification as specialists in Internal Medicine will comprise, Part I (written) and Part II (practical or clinical)

Part I The written examination is to be held simultaneously in different sections of the United States and Canada and will include

- (a) Questions in applied physiology, physiological chemistry, pathology, pharmacology, and the cultural aspects of medicine.
- (b) Questions in general internal medicine

The first written examination will be held in December 1936, and candidates successful in this written test will be eligible for the first practical or clinical examination which will be conducted by members of the Board near the time for the annual session of the American College of Physicians at St. Louis in April 1937. The second practical examination will be held at Philadelphia near the time of the annual session of the American Medical Association in Atlantic City in June 1937.

The fee for examination is forty dollars which must accompany the application and an additional fee of ten dollars is required when the certificate is issued.

Application blanks and further information can be obtained by addressing the office of the chairman, Walter L. Biering, M.D., 406 Sixth Avenue, Des Moines, Iowa.

INTER STATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

The twenty-first International Assembly of the Inter-State Post-graduate Medical Association of North America, under the presidency of Dr. David Riesman of Philadelphia, Penn., will be held in the public auditorium of St. Paul, Minn., October 12-16 with pre-assembly clinics on October 10 and post-assembly clinics October 17 in the hospitals of St. Paul.

The aim of the program committee with Dr. George Crile as chairman, is to provide for the medical profession of North America an intensive postgraduate course covering the various branches of medical science. The program has been carefully arranged to meet the demands of the general practitioner, as well as the specialist. Extreme care has been given in the selection of the contributors and the subjects of their

contributions.

In cooperation with the Minnesota State Medical Association, the Ramsey County Medical Society will be host to the Assembly and has arranged an excellent list of committees who will function throughout the Assembly.

A most hearty invitation is extended to all members of the profession who are in good standing in their State or Provincial Societies to be present and enjoy the hospitality of the medical profession of St. Paul. A registration fee of \$5.00 will admit each member of the medical profession in good standing to all the scientific and clinical sessions.

Special railroad rates will be in effect.

For further information write Dr. W. B. Peck, Managing-Director, Freeport, Ill.

The American Board of Internal Medicine (Inc)

The American Board of Internal Medicine, incorporated February 28, 1936 completed its organization on June 15, 1936. The officers chosen were Walter L. Bierring, M D, Des Moines, *Chairman*, Jonathan C. Meakins, M D, Montreal, *Vice-Chairman*, and O. H. Perry Pepper, M D, Philadelphia, *Secretary-Treasurer*. These officers with the following six members constitute the present membership of the board, David P. Barr, M D, St. Louis, Reginald Fitz, M D, Boston, Ernest E. Irons, M D, Chicago, William S. Middleton, M D, Madison, John H. Musser, M D, New Orleans, and G. Gill Richards, M D, Salt Lake City.

The term of office of each member will be three years, and no member can serve more than two consecutive three-year terms.

The organization of the Board is the result of effective effort on the part of the American College of Physicians in conjunction with the Section on Practice of Medicine of the American Medical Association and these two organizations are represented in the membership of the Board on a five to four ratio respectively.

The American Board of Internal Medicine had previously received the official approval of the two bodies fostering its organization, as well as that of the Advisory Board for Medical Specialties and the Council on Medical Education and Hospitals of the American Medical Association.

The purpose of the Board will be the certification of specialists in the field of internal medicine, and the establishment of qualifications with the required examination procedure for such certification.

While the Board is at present chiefly concerned with the qualification and procedure for certification in the general field of internal medicine, it is intended to inaugurate immediately after July 1, 1937 similar qualification and procedure for additional certification in certain of the more restricted and specialized branches of internal medicine, as gastroenterology, cardiology, metabolic diseases, tuberculosis, allergic diseases, etc. Such special certification will be considered only for candidates who have passed at least the written examination required for certification in general internal medicine. The operation of such a plan will require the active participation and cooperation of recognized representatives from each of such special fields of medicine.

Each applicant for admission to the examination in internal medicine will be required to meet the following standards:

GENERAL QUALIFICATIONS

- 1 Satisfactory moral and ethical standing in the profession.
- 2 Membership in the American Medical Association or, by courtesy, membership in such Canadian or other medical societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the American Medical Association. Except as here provided, membership in other societies will not be required.

PROFESSIONAL STANDING

- 1 Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association.
- 2 Completion of an internship of not less than one year in a hospital approved by the same council.
- 3 In the case of an applicant whose training has been received outside of the United States and Canada, his credentials must be satisfactory to the Advisory Board for Medical Specialties and the Council on Medical Education and Hospitals of the American Medical Association.

SPECIAL TRAINING

- 1 Five years must elapse after completion of a year's internship in a hospital approved for interne training before the candidate is eligible for examination.
- 2 Three years of this period must be devoted to special training in internal medicine. This requirement should include a period of at least several months of graduate work under proper supervision in anatomy, physiology, biochemistry, pathology, bacteriology, or pharmacology, particularly as related to the practice of internal medicine.

This work may be carried on in any domestic or foreign medical school or laboratory recognized by the Council on Medical Education and Hospitals of the American Medical Association as offering appropriate facilities for this type of postgraduate experience, or it may include a period of at least several months of graduate work under proper supervision in internal medicine or in its restricted and specialized branches in any domestic or foreign hospital, clinic, or dispensary, recognized by the above Council as offering appropriate facilities for this type of postgraduate experience.

- 3 A period of not less than two years of special practice in the field of internal medicine or in its more restricted and specialized branches.

The American Board of Internal Medicine does not propose to establish fixed rules for the preliminary training of candidates for certification in this field. Broad general principles for training, however, may be outlined, although such suggestions as are made must, of necessity, be subject to constant changes reflecting the dynamic nature of the specialty.

Mayo Clinic, Rochester Minn., and Dr. E. V. Allen, Assistant Professor of Medicine, University of Minnesota Graduate School of Medicine Mayo Clinic, Rochester, Minn.

Diagnostic Clinic Bodily Type in Relation to Endocrine Function Dr. Charles R. Stockard Professor of Anatomy, Cornell University Medical College, New York N. Y.

1 00 P. M.

Diagnostic Clinic "The Nature and Management of Nephritis Edema" Dr. Louis H. Newburgh, Professor of Clinical Investigation in Internal Medicine, University of Michigan Medical School, Ann Arbor, Mich.

Address Circulatory Failure in Acute Infectious Diseases Dr. William R. Williams Professor of Clinical Medicine, Cornell University Medical College, New York, N. Y.

Address "Genesis and Surgical Treatment of Essential Hypertension" Dr. George Crile, Cleveland Clinic, Cleveland, O.

INTERMISSION FOR REVIEW OF EXHIBITS

Address "Relation of Diseases of the Sinuses to Organic Disease" Dr. Robert F. Ridpath, Professor of Laryngology and Rhinology, Temple University School of Medicine, Philadelphia, Pa.

Address "Intrathoracic Gaster" Dr. Charles G. Heyd, Professor of Clinical Surgery, New York Postgraduate Medical School, New York, N. Y. President American Medical Assn.

Address "Non Surgical Diseases of the Colon" Dr. Joseph W. Larrimore, Associate Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Mo.

Address "The Surgical Anatomy of the Anal Canal (including methods of Treatment of Fistula in Ano)" Mr. C. Naunton Morgan, F.R.C.S., Senior Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum Surgeon to the Hospital for Tropical Diseases Casualty Surgeon to St. Bartholomew's Hospital, London, Eng.

ASSEMBLY DINNER 7 00 P. M. (Informal)

For members of the profession, their ladies, and friends

Dr. David Riesman Master of Ceremonies
Presentation of Token of Appreciation to Dr. Charles H. Mayo and Dr. William J. Mayo, Rochester, Minn.

Addresses by eminent members of the profession and other distinguished citizens of the world

THURSDAY, OCTOBER 15, 8 00 A. M.

Diagnostic Clinic "The Relation of the Psychoses to Systemic Diseases" Dr. Earl D. Bond Professor of Psychiatry University of Pennsylvania School of Medicine, Philadelphia, Pa.

Diagnostic Clinic "Indications for Surgery and the Surgical Treatment of Peptic Ulcer" Dr. Frank H. Lahey, Director of Surgery in the Lahey Clinic Surgeon of the New England Baptist Hospital and New England Deaconess Hospital Boston, Mass.

Diagnostic Clinic "The Relation of Endocrine Glands to Circulatory Diseases" Dr. Leonard G. Rowntree, Director Philadelphia Institute for Medical Research, Philadelphia, Pa.

INTERMISSION FOR REVIEW OF EXHIBITS

Diagnostic Clinic "Cryptorchidism" Dr. Hugh Cabot, Professor of Surgery University of Minnesota Graduate School of Medicine, Rochester, Minn. (Mayo Clinic.)

Diagnostic Clinic "The Relation of Lumbosacral Joint to Low Back Pain" Dr. Alan DeForest Smith, Clinical Professor of Orthopedic Surgery, Columbia University College of Physicians and Surgeons, New York, N. Y.

1 00 P. M.

Address "Allergic Diseases" Dr. Robert A. Cooke, Assistant Professor of Clinical Medicine Cornell University Medical College, New York, N. Y.

Address "Significance of Menorrhagia and Metrorrhagia" Dr. John R. Fraser, Professor of Obstetrics and Gynecology McGill University Faculty of Medicine, Montreal, Canada.

Address (Subject to be supplied) Dr. Charles H. Mayo, Mayo Clinic, Rochester, Minn.

Address "Applications of Cavity Grafting" Mr. Archibald H. McIndoe, M.B., Ch.B. (N.Z.), M.Sc. (Path.), M.S., F.A.C.S., F.R.C.S. (England), Assistant Plastic Surgeon, Plastic Unit, St. James's Hospital Consulting Plastic Surgeon, Royal North Staffordshire Infirmary, Chief Assistant Plastic Surgery, St. Bartholomew's Hospital Sen. Surgeon, Hospital for Tropical Diseases, London, England.

INTERMISSION FOR REVIEW OF EXHIBITS

Address "Function and Deformity in Fracture Results" Dr. Eldridge L. Eliason, Professor of Clinical Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pa.

Address "The Early Diagnosis of Bronchogenic Carcinoma" Dr. Chevalier Jackson, Professor of Bronchoscropy and Esophagoscropy Temple University School of Medicine, and Dr. Chevalier L. Jackson Professor of Clinical Bronchoscropy and Esophagoscropy, Temple University School of Medicine, Philadelphia, Pa.

Address "Water Balance in Children" Dr. Samuel Z. Levine, Acting Professor of Pediatrics, Cornell University Medical College, New York, N. Y.

Address "The Surgery of Acute and Chronic Compression of the Heart" Dr. Claude S. Beck, Associate Professor of Surgery, Western Reserve University School of Medicine, Cleveland, O.

7 00 P. M.

Address "Ophthalmic Consultations in a General Hospital" The Joseph Schneider Foundation Presentation Dr. Lawrence T. Post, Professor of Ophthalmology, Washington University School of Medicine St. Louis, Mo.

Address "General Therapeutic Methods for the Protection of Patients in the Extremes of Life" Dr. Irving S. Cutter, Dean and Associate Professor of Medicine, Northwestern University Medical School Chicago, Ill.

Address "Periodic Health Examination" Dr. Reginald Fitz, Associate Professor of Medicine, Harvard University Medical School, Boston Mass.

Address "The Diagnostic Significance of the Respiratory Rate" Dr. Frederick J. Kaltefleiter, Clinical Professor of Medicine, Jefferson Medical College, Philadelphia, Pa.

Address "The Sella Turcica" Dr. Eric Oldberg Professor of Neurology and Neurological Surgery, University of Illinois College of Medicine, Chicago Ill.

FRIDAY, OCTOBER 16, 8 00 A. M.

Diagnostic Clinic "The Differential Diagnosis of Pain in the Chest" Dr. John A. Oille, Assistant Professor of Medicine, University of Toronto Faculty of Medicine, Toronto Canada

Diagnostic Clinic "Fracture of the Neck of the Femur The Problem Fracture" Dr. John J. Moorhead, Professor of Clinical Surgery, New York Postgraduate Medical School, New York, N. Y.

Diagnostic Clinic "Protamine Insulin" Dr. Elliott P. Joslin, Clinical Professor of Medicine, Harvard University Medical School, Boston, Mass., and Dr. Priscilla White, Boston, Mass.

INTERMISSION FOR REVIEW OF EXHIBITS

Diagnostic Clinic Review of Operative and Non-operative Treatment of Prostatic Obstruction Dr. William E. Lower, Cleveland Clinic, Cleveland, O.

Address "The Differential Diagnosis of Chills and Fever" Dr. James H. Means, Jackson Professor of Clinical Medicine, Harvard University Medical School Boston, Mass.

1 00 P. M.

Address "Diabetes Insipidus" Dr. Elliott C. Cutler, Moseley Professor of Surgery, Harvard University Medical School, Boston, Mass.

Address "Treatment of the Elderly Chronic Cardiac" Dr. Cary Eggleston, Assistant Professor of Clinical Medicine, Cornell University Medical College, New York, N. Y.

Address (Subject to be supplied) Dr. William J. Mayo, Mayo Clinic, Rochester, Minn.

INTERMISSION FOR REVIEW OF EXHIBITS

Address "The Applied Physiology of the Sphincter of Oddi" Dr. Andrew C. Ivy, Davis Professor of

PROGRAM

International Medical Assembly
St Paul, Minnesota

October 12, 13, 14, 15, 16, 1936

Pre-Assembly Clinics, October 10

Post-Assembly Clinics, October 17

MONDAY, OCTOBER 12, 8 00 A M

Diagnostic Clinic 'Coronary Thrombosis and Angina Pectoris' Dr Fred M Smith, Professor of Theory and Practice of Medicine, State University of Iowa College of Medicine, Iowa City, Iowa

Diagnostic Clinic 'Diseases of the Thyroid Gland' Dr Robert S Dinsmore, Cleveland Clinic, Cleveland, O

Diagnostic Clinic 'Rheumatoid Arthritis' Dr Russell L. Haden, Chief of Medical Division, Cleveland Clinic, Cleveland, O

INTERMISSION FOR REVIEW OF EXHIBITS

Diagnostic Clinic 'Trigeminal Neuralgia' Dr Francis C Grant, Assistant Professor of Neurological Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pa.

Diagnostic Clinic 'Pathologic Physiology of the Common Bile Duct and Its Relation to Disease of the Biliary Tract' Dr Waltman Walters, Associate Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

1 00 P M

Address 'Obstetric Hemorrhages and Their Treatment' Dr Jennings C Litzberg, Professor of Obstetrics and Gynecology, University of Minnesota Medical School, Minneapolis, Minn.

Address 'Relation of the Endocrine Glands to Sterility' Dr Emil Novak, Associate Professor of Obstetrics, University of Maryland School of Medicine, Baltimore, Md.

Address 'The Radical Cure of Malignant Tumors of the Bladder' Dr Hugh H Young, Professor of Urology, Johns Hopkins University School of Medicine, Baltimore, Md.

INTERMISSION FOR REVIEW OF EXHIBITS

Address 'Treatment of Diabetes during Surgical Emergencies' Dr Herman O. Mosenthal, Professor of Clinical Medicine, New York Postgraduate Medical School, New York, N Y

Address 'Problems in the Diagnosis of Diabetes' Dr Robert D Lawrence, M.A., M.D., F.R.C.P., Physician to Kings College Hospital, Diabetic Department, London, England

Address 'Neurological Surgery' Dr Loyal Davis, Professor of Surgery, Northwestern University School of Medicine, Chicago, Ill

7 00 P M

Address 'Endocrine Disorders in Childhood' Dr Frederick W Schlutz, Richard T Crane, Professor of Pediatrics, University of Chicago School of Medicine, Chicago, Ill

Address 'Peritonitis' Dr Frederick A. Collier, Professor of Surgery, University of Michigan Medical School, Ann Arbor, Mich.

Address 'Very Recent Advances in Medicine' Dr Russell M Wilder, Professor of Medicine, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Address 'Practical Points in Clinical Surgery' Dr W Wayne Babcock, Professor of Surgery and Clinical Surgery, Temple University School of Medicine, Philadelphia, Pa.

Address 'Intravenous Anesthesia' Dr John S Lundy, Professor of Anesthesia and Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minn

TUESDAY, OCTOBER 13, 8 00 A M

Diagnostic Clinic 'Clinical Nutritional Disease (Vitamin B Deficiency)' Dr Andrew Almon Fletcher, University of Toronto Faculty of Medicine, Toronto, Canada.

Diagnostic Clinic 'Diagnosis and Treatment of Brain Tumors' Dr Walter E. Dandy, Adjunct Professor of Neurological Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Diagnostic Clinic 'The Diagnosis of Bone Lesions' Dr Dean D Lewis, Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

INTERMISSION FOR REVIEW OF EXHIBITS

Diagnostic Clinic 'Tumors of the Breast' Dr John F Erdmann, Attending Surgeon of the New York Postgraduate Hospital and Medical School, New York, N Y

Diagnostic Clinic 'The Psychobiology of the Peptic Ulcer Patient' Dr George Draper, Associate Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons, New York, N Y

1 00 P M

Diagnostic Clinic 'Treatment and Guidance of Patients with Damaged Hearts' Dr David Riesman, Professor of Clinical Medicine and Professor of History of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pa., President, Inter State Post Graduate Medical Association.

Address 'The Treatment of Endocervicitis' Dr Walter T Dannreuther, Professor of Clinical Gynecology, New York Postgraduate Medical School, New York, N Y

Address 'Diffuse Adenomatosis of the Colon' Dr Fred W Rankin, Lexington, Ky

INTERMISSION FOR REVIEW OF EXHIBITS

Address (Subject to be supplied) Dr Francis J Charteris, M.D., Ch.B., Professor of Materia Medica and Therapeutics, St. Andrews University School of Medicine, St. Andrews, Scotland.

Address 'Factors Frequently Overlooked in the Management of the Patient with Heart Disease' Dr Charles A. Elliott, Professor of Medicine, Northwestern University School of Medicine, Chicago, Ill

Address 'The Diagnosis of Intracranial Complications of Aural and Nasal Sinus Suppuration' Dr Wells P Eagleton, Newark, N J

Address 'Treatment of Acute and Chronic Mastoiditis' Dr Matthew S Ernsner, Professor of Otolaryngology, Temple University School of Medicine, Philadelphia, Pa.

7 00 P M

Address 'The Consideration and Management of Some of the More Common Congenital Deformities of the Rectum' Dr Vernon C David, Clinical Professor of Surgery, Rush Medical College, Chicago, Ill

Address 'The Diagnosis and Treatment of Tumors of the Bladder by Means of the Roentgen Rays' Dr George E Pfahler, Professor of Radiology, University of Pennsylvania Graduate School of Medicine, Philadelphia, Pa.

Address 'The Cerebral Regulation of Autonomic Function' Dr John F Fulton, Sterling Professor of Physiology, Yale University School of Medicine, New Haven, Conn

Address 'Siphulus of the Heart and Blood Vessels' Dr Maurice C. Pincoffs, Professor of Medicine, University of Maryland School of Medicine, Baltimore, Md.

Address 'The Management of Intestinal Obstructions' Dr Owen H Wangersten, Professor of Surgery, University of Minnesota Medical School, Minneapolis, Minn.

WEDNESDAY, OCTOBER 14, 8 00 A M

Diagnostic Clinic 'Paralyses in Children' Dr Bronson Crothers, Assistant Professor of Pediatrics, Harvard University Medical School, Boston, Mass

Diagnostic Clinic 'Carcinoma of the Stomach' Dr Donald C. Balfour, Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minn

Diagnostic Clinic 'Economic Advantages of Early Protected Weight Bearing in Fractures of the Leg, Foot and Ankle' Dr Fraser B Gurd, McGill University Faculty of Medicine, Montreal, Canada.

INTERMISSION FOR REVIEW OF EXHIBITS

Diagnostic Clinic 'Essential Hypertension' Dr Alfred W Adson, Professor of Neurosurgery, University of Minnesota Graduate School of Medicine

Valentine, Captain Joseph Mooney of the narcotic squad, and other police officials

The weed, which formed a pile ten feet high and fifty feet wide, had been collected by the police for six months from various sections of Brooklyn, Queens and the Bronx. It weighed ten tons. In all boroughs a total of forty tons have been eradicated.

Nassau County

ACTIVE STEPS ARE being taken in Nassau County to control venereal diseases. The County Medical Society and the County Public Health Committee have united in an educational drive.

A group of physicians are being trained to act as consultants for those patients unable to pay the usual fee charged by a private doctor. County medical men have already held several meetings to study control of the diseases.

New York County

FEWER CASES of poliomyelitis have been reported during the first eight months of 1936 than in any other corresponding period in this century, according to the records of the New York City Health Department.

A PLEA FOR PERMISSION to institute a physicians' radio paging service in New York City was recently made before the Federal Radio Communications Commission by Doctors' Telephone Service, Inc. The proposal provides for receiving devices rented to physicians and installed in their automobiles. Each of these sets would have its own combination of numbers—a code in dots and dashes. When a particular doctor is needed his number would be broadcast and only his set would respond by setting off a buzzer and pilot light in the car. The doctor would then call the exchange for the message. A special wavelength would have to be set aside for this purpose by the Commission to allow this plan to be put into effect.

DR. MARK L. FLEMING, general medical superintendent of the Department of Hospitals, will retire from the department on Oct. 13. Dr. S. S. Goldwater, Commissioner of Hospitals, said he had accepted Dr. Fleming's resignation with regret. Dr. Fleming has been associated with public hospital service since his medical graduation in 1901. As administrative head of Bellevue and its affiliated units, Harlem, Fordham and Gouverneur Hospitals, Dr. Fleming became widely known in the hospital field. Following the consolidation of the City's hospital services, Dr. Fleming in 1930 was advanced to the position of departmental general medical superintendent of the Department of Hospitals, the highest attainable

Civil Service post in the City's hospital service.

DR. EDWARD JOHN RILEY, vice-president of the medical board of St. Vincent's Hospital and assistant clinical professor of medicine at the College of Medicine of New York University, died Aug. 3 in St. Vincent's Hospital, Seventh Avenue and Eleventh Street. He was fifty-one.

Dr. Riley came to New York in 1911 and studied pathology at New York University, becoming an instructor in 1915. During the World War he saw active service in France as major in the United States Army Medical Corps.

DR. FRANK RICHARD OASTLER, sixty-five, chief gynecologist and obstetrician at Lenox Hill Hospital and a noted conservationist, died Aug. 2 of a heart attack at Glacier National Park, Montana.

Because of his interest in wild life he was vice-president of the Campfire Club, the National Assn. of Audubon Clubs and of the Explorers' Club. He was also on the board of the National Park Service. He formerly directed Lincoln Hospital.

BEGINNING IN OCTOBER the New York Post Graduate School of Columbia University inaugurates a series of sessions dealing with Medical economics, Medical law, Medical writing, Medical broadcasting, Medical ethics, Public speaking, Medical consultations, Types of insurance.

Ontario County

DR. NATHAN T. MILLIKEN of Canandaigua, superintendent of Oak Mount Sanatorium, has resigned, and will become a member of the faculty of Dartmouth Medical College, at Hanover, N. H. Dr. Milliken also relinquished his place on the staff of Memorial Hospital in Canandaigua and his private practice in that city.

Orange County

THE MIDDLETOWN Department of Public Health will soon be supervising schools for expectant fathers, it is announced by Dr. H. J. Shelley, city health officer. According to Dr. Shelley, the schools will be similar to the pre-natal clinics now held for expectant mothers.

Similar schools have been established in other cities and have been quite successful. At the meetings for the fathers, probably held once a month, as are the pre-natal clinics, hygienic and social aspects of fatherhood would be discussed. Dr. Shelley said that the school would probably be sponsored by an important legal official and a group of physicians.

Physiology and Professor of Pharmacology, Northwestern University Medical School, Chicago, Ill

Address 'The Acute Abdomen' Dr Irvin Abell, Clinical Professor of Surgery, University of Louisville School of Medicine, Louisville, Ky

Address "The Role of the Practitioner and the Specialist in the Management of Urinary Tuberculosis" Dr Joseph F McCarthy, Professor of Clinical Urology, New York Postgraduate Medical School, New York, N Y

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested

Albany County

DR ARTHUR J BEDELL and Mrs Bedell of Albany have returned from England Dr Bedell was a delegate from the American Medical Association to the meeting of the British Medical Association at Oxford

Cattaraugus County

DR. JOHN H KORNS, head of the Bureau of Tuberculosis in the Cattaraugus County Department of Health, sailed in July with Mrs Korns to spend the summer in Europe. He will attend the sessions of the National Association for the Prevention of Tuberculosis in London and will visit several sanatoria. From September 7 to 10 he will attend the biennial meeting of the International Union against Tuberculosis, in Lisbon, Portugal, where he will discuss one of the tuberculosis papers from the standpoint of experience in Cattaraugus County. Doctor Korns is aided in this trip by a travel scholarship from the Milbank Memorial Fund.

During his absence Dr Clinton N Woolsey will be in charge of Rocky Crest Sanatorium and will conduct the usual clinics over the county. Doctor Woolsey, who is a graduate of Olean High School, is a member of the faculty of the medical school at John Hopkins University.

Erie County

BUFFALONIANS ARE GOING to pay an estimated bill of \$28,200 in complying with the new ordinance requiring house numerals four inches high.

The ordinance, adopted by the Common Council and approved by Mayor Zimmermann, was proposed by the Erie County Medical society, whose members had become weary of tracking down their patients in unnumbered houses. Dr James L Gallagher was chairman of the society's committee which sponsored the ordinance. Dr Gallagher said that the society would appreciate it if citizens could use some type of marker visible at night.

Genesee, Wyoming, Livingston

MEDICAL SOCIETIES of Genesee, Wyoming and Livingston counties held their annual summer meeting August 5 at Genesee. The program included golf and bridge at the Livingston Country Club, and a dinner at Big Tree Inn.

B E Sackett of Buffalo, a member of the Federal Bureau of Investigation, Department of Justice spoke at the dinner on 'Work and Functions of the Federal Bureau'.

Jefferson County

THE JEFFERSON COUNTY MEDICAL Society is cooperating with Mayor Kieff of Watertown to reduce the cost of medical care for welfare patients. A recent statement was made by the mayor in the city council to the effect that physician's fees had increased \$1,000 for the first six months of 1936 over that of a similar period in 1935, in spite of a drop in the relief roll. The correct figures submitted by the welfare department show an actual decrease of \$1,150.

Kings County

THERE HAS BEEN FORMED the Brooklyn Thoracic Society, for the study of medical and surgical diseases of the thorax. The Society will hold stated clinics in the larger hospitals of Brooklyn as well as the usual formal meetings in the building of the Kings County Medical Society. Its plan to develop what is virtually a postgraduate seminar in thoracic disease "has met with unusual enthusiasm." The following are officers of the Society: President, Dr Foster Murray, Vice-President, Dr John A Jennings, Treasurer, Dr Harry Meyersburg, Secretary, Dr Alex L Louria. The first stated scientific meeting will be held on October 16, at the building of the Kings County Medical Society.

THREE MILLION DOLLARS' WORTH—at bootleg prices — of marijuana weed, which is used in cigarette form as a narcotic, was burned in a vacant lot in Brooklyn August 13 in the presence of Police Commissioner

Medicolegal

LORENZ J. BROSNAN, Esq.
Counsel Medical Society of the State of New York

A Very Unusual Surgical Case

An example of the freakish type of case which sometimes leads to a malpractice action was the subject of litigation in a neighboring jurisdiction.* The action very recently was passed upon by the Court of Appeals of that State, with a result favorable to the physician.

A maiden lady, fifty-five years of age, fell in her home in some manner and fractured her hip. She immediately called in Dr. T, her family physician, who in a day or so diagnosed the condition and suggested that Dr. A, an orthopedic surgeon, be called in the case. Dr. A thereupon undertook the care of the patient, and his diagnosis after x-ray examination was of intracapsular fracture of the left femur. He caused the patient to enter a hospital, and a week after the original injury performed an open operation. The procedure followed consisted essentially of opening the thigh to the bone, drilling through the neck of the femur, and after setting the fractured bone, the insertion through the opening of a bone peg about five inches in length to hold the broken bone in position. No criticism was made by the patient in the subsequent litigation concerning the operation itself.

After the operation the patient remained under the general care of Dr. A. An infection appeared in the injured hip which was drained in due course. However, she shortly developed an enormous distension of the abdomen. Dr. A about sixteen days after the operation examined her to ascertain the cause, and found what he felt to be a fecal mass. The family physician Dr. T was called in consultation, and he felt it was due to malignancy of the colon. Dr. A advised, however, that in view of the condition of the hip she could not be disturbed at the time to overcome the possible malignancy. Attempts were made to treat her medically and in a few weeks the distension disappeared.

Her progress then was relatively uneventful until about four months from the original injury when she complained of a burning of the bladder. Dr. T at that time prescribed for her. Urinalysis showed alkaline urine and some pus. After several weeks of treatment the patient not improving under ordinary treatment for cystitis

Dr. A called for another urine examination which showed blood and pus in considerable quantities. A vaginal examination indicated a mass in the region of the bladder. Some weeks before there had been some bleeding of the bladder which had been noted, but her physical condition had improved, so no particular importance had been attached to it. Intense pain continued after the last referred to examinations, and the patient had excessive and frequent urination.

Finally, nearly six months in all after the operation, Dr. G, a urologist, was brought into the case by Dr. A. He examined her and had x-rays taken. The x-rays showed that the bone peg had migrated from the position where it had been placed, and had passed through the intervening tissue into the bladder. It had travelled some six or seven inches and at the time was entirely out of the hip bone. The place of exit from the tissue, and of its entry into the bladder had been walled off by a multiplication of tissue.

An abdominal operation was promptly performed by Dr. G which was followed by immediate and complete recovery by the patient. It appeared that the case was such a rare and unusual one that Dr. G delivered the peg to the American Urological Association as he knew of no comparable case in medical literature.

The patient brought an action against Dr. A charging him with malpractice on the theory that he was negligent in failing to promptly ascertain what was happening and to take steps to immediately remedy the situation.

One of the principal witnesses called by the plaintiff was Dr. G and his testimony in answer to certain questions put to him was as follows:

Q Suppose you took the x-ray thirty days before you did and found the end of the bone was protruding through the hip bone, would you have removed it at that time? A. No, sir.

Q Why? A. Because if it was protruding through the bone there would be no way to get it out except by cutting the bone.

Q Would or not that operation have been advisable? A. No sir it would not. I would not have done it.

Q Why? A. * * * If it was still in the head of the femur it could not have reached the bladder. It must be free from the bone before it can reach the bladder.

Q Would not it have been the proper practice to remove the peg even if you had found it

*McAdor v. Arnold 94 S.W. 2nd—626

Queens County

THE ENTERTAINMENT COMMITTEE of the Medical Society of the County of Queens is planning "an old-fashioned clam bake," for Sept. 17

A "COMPLETE EXPOSITION of the subject of tuberculosis" will be presented at the stated meeting of the Medical Society of the County of Queens on Sept. 29 President Dobbins says that "It is anticipated to present to our membership and the public a display which will portray the complete history of tuberculosis from the discovery of the cause to its pathological effects and what has been accomplished toward the cure and eradication of this disease" The program will include these papers

Silicosis, Evaluation in Relationship to Tuberculosis—By R. R. Sayers, MD, Senior Surgeon, Office of Industrial Hygiene and Sanitation, United States Public Health Service, Washington, D C

Epidemiological and Social Phases of the Tuberculosis Problem—By J Burns Amberson, Jr, MD, Visiting Physician, Tuberculosis Service, Bellevue Hospital

Practical Application of the Newer Methods of Treatment of Tuberculosis—By Abraham Braunstein, MD, Associate Physician in Charge, Tuberculosis Service, Queens General Hospital, Attending Physician, Tuberculosis Service, Metropolitan Hospital

The symposium is being sponsored in collaboration with the Queensboro Tuberculosis Association

It also was reported that Dr Alfred Angrist and Dr Evan McLave have been appointed by Health Commissioner Rice to represent the Queens Medical Society on an advisory committee on pneumonia control This committee will comprise representatives of the County Societies of Greater New York, the New York Academy of Medicine, the Department of Hospitals and the Department of Health

St Lawrence County

THE JULY MEETING of the St. Lawrence County Medical Society was held on the 23d at the Ogdensburg Country Club A luncheon, followed by a business session, then golf for the doctors and bridge for the ladies, made up the program The August meeting was held on the 13th at Gouverneur

Suffolk County

FIRE ISLAND HAS BEEN officially declared a haven for hay fever victims by the State Department of Health, and Dr Sumner Shailer, health officer of Ocean Beach, is directing the removal of all ragweed on the beach

MRS JOHN L BAUER of Brooklyn and Bayport and president of the Auxiliary of the Medical Society of the State of New York entertained the members of the newly formed Suffolk County Group at her home Aug 6 Among those present were Mrs William N Barnhart, Mrs Arthur Soper, Mrs E R Hildreth, Mrs P Nugent, Mrs Wickham Case, Mrs Edwin P Kolb, Mrs Frank Overton, Mrs Frank Child, Mrs Guy Terrell, Mrs D L McDonald, Mrs William Ross and Mrs David Edwards

Warren County

HONOR AND RECOGNITION for twenty-five years of distinguished public service in giving Warren County one of the most advanced and efficient laboratories in the state was paid to Dr Morris Maslon of Glens Falls at a testimonial dinner on Aug 5 in the Fort William Henry Hotel, Lake George. More than two hundred persons were present to pay respect to the doctor whose untiring efforts for the good of the people have won him so high a place in the community In addition to being Dr Maslon's twenty-fifth anniversary as head of the laboratory, it was his and Mrs Maslon's twenty-fifth wedding anniversary and the fiftieth anniversary of the wedding of his parents, Mr and Mrs Wolf Maslon of Brooklyn, who were present at the dinner

Westchester County

AN OUTBREAK OF RABIES in Westchester has become so serious that the County Department of Health arranged to ask the Supervisors for an additional appropriation to carry on dog supervision work, according to press reports

It is the worst year on record, said Dr Richard H. Slee, Deputy Commissioner Usually there is a letup in rabies during July and August, but not this year We have found fifty-nine dogs suffering from the disease since Jan. 1, and the worst of the picture is that arrival of cold weather usually causes a sharp increase

The County Health Department, covering White Plains and eighteen townships, has four dog catchers' wagons combing the area New Rochelle, Yonkers and Mount Vernon have their own departments and carry on their own fights against rabies

There is little hope that the State Health Department soon will lift its dog quarantine on Westchester, which requires every canine to be muzzled, said Dr Slee

Usually rabies develops in a dog within six months after infection, but the period of incubation is indefinite and it may be years before conditions in Westchester are back to normal

Across the Desk

A Sanguinary Conflict

"READ YOUR OWN BLOOD PRESSURE, 104," was the large sign in front of a device at Coney Island, pictured on the next page, which has become the storm center of a legal battle. The State Department of Education has asked the Supreme Court to order this and other machines of the kind out of existence on the ground that their operation violates the State Medical Practice Act. Taking a blood pressure is argued to be a diagnosis of a physical condition, and should not be done except by a physician. The maker of the machines has countered by filing an injunction to prevent interference with his business, and the matter will be fought out in the courts.

On August 12 an operator of one of the machines was arrested on a charge of practicing medicine without a license, and will soon be brought to trial. Any comment here on his guilt or innocence of this offense before the verdict would be in contempt of court, and the next issue of this department might have to be written in the calaboose, so nothing had better be said, perhaps, on that point.

It would be easy to magnify the danger of this blood-pressure device out of all true proportion. Probably nobody with arteriosclerosis is going to burst a blood-vessel when he sees the pointer climb to some high figure on the dial. At the same time we all know that such a casual sidewalk reading is more likely to be wrong than right. The poor dupe who pays his dime may easily be so fidgety that he will show a higher pressure than he normally has. Every doctor knows the excitable type of patient who has to be calmed down and put at his ease before taking the reading, or it will be too high. A leading Boston internist is quoted

as saying that he takes three rapid readings in succession in all cases and accepts the lowest systolic and diastolic as the fairest.

Firing a Cannon at a Flea

The Coney Island device came up in a conversation at the New York Academy of Medicine a few days ago and a well-known physician said it reminded him of an experience related by Heywood Broun, the columnist. It seems that Broun was having a physical examination, and noticed a slight lift of the doctor's eyebrow as he took his blood-pressure. "What's wrong, doctor?" "Oh, nothing." "Why did you lift your eyebrow?" "Well, your blood-pressure is just a little low, but not enough to bother about."

Nevertheless, it did worry him, and a few days later he decided to have another doctor go over him. Again, as he was taking the blood-pressure, the physician's eyebrow arched a trifle. "What's wrong, doctor?" "Oh, nothing." "Why did you lift your eyebrow?" "Well, your blood-pressure is just a little high, but not enough to bother about." The worry had done it. The fact is of course, that the arterial tension is so fickle an affair that a device like the one at Coney is worse than useless. To take a test after chuting the chutes, bumping the bumps, riding the merry-go-round, and filling up with hot-dogs and peanuts is like counting the pulse after a foot-race. But to get all steamed up over the imaginary perils of the machine is equally too feverish. If some folks are scared into consulting a doctor, they may get a real examination and advice that will do them good. Too drastic action may be like firing a cannon at a flea.

Soviet Medicine, an Example to the World

NEW ILLUMINATION KEEPS COMING all the time on the wonderful medical system in Soviet Russia, which we are urged to copy by the socializers who praise everything there, but prefer to live here. The latest ray of light comes appropriately from Donald Dav, a special correspondent of the *Chicago Tribune*, whose story is headed, "Many Epidemics Traced to Soviet Cities." We learn that Estonia, Latvia, and Finland

regard Leningrad and Moscow as "congested and underfed cities," which are centers for the spread of contagious disease. Excursionists from these neighbor lands visiting the Soviet cities bring typhus and other unpleasant ills back home with them. Health officials are alarmed, and the press urge more watchcare along the frontier. The Soviet medical system is certainly an example for us—of what to avoid.

before nature built up that wall? A No, sir, it would not, but it would have meant a very violent sepsis—blood poisoning * * *

Q Even if Dr A had taken an x-ray at any time before your x-ray was taken and found the peg in a different position, you don't say he did anything wrong by leaving it in there? A Well, if it showed in the position in which I saw it, I think it was advisable to take it out * * *

Q Is it usual and customary for one of your profession, or one of Dr A's profession, an orthopedic surgeon, if you know, if he discovers that blood is coming from the bladder continuously for approximately two weeks to do anything more than to treat the bladder in the usual and ordinary way such as a general practitioner would do? A. I regret to say it is not

Q Or is it customary or usual to take an x-ray to find out especially when the bladder is being treated by a family physician? A. No, sir

Q Or to send the patient to a bladder specialist? A No, sir

The defendant himself was called by the plaintiff as a witness, and various physicians also testified, and at the conclusion of the plaintiff's case, the Court directed a verdict in favor of the defendant.

The plaintiff took an appeal from the judgment of the Trial Court, and upon appeal the judgment was affirmed. In so ruling the Appellate Court commented upon the case in part as follows

It is admitted in the petition that the fortuitous lodging of the bone peg in the bladder was without the semblance of fault on the part of Dr A. It is true its location in the tissue, before it entered the bladder, as well as after it completed its tour and lodged therein, could have been observed by an x-ray examination, but the fractured hip and its cure were of first importance

Its treatment and care and the intelligent treatment of the abdomen and bladder trouble at the time were entirely compatible. And the medical testimony establishes beyond doubt or debate that so long as the paramountcy of the condition of the latter was not obviously imperiling her health or life it was Dr A's duty to allow Dr T's treatment thereof to be continued until the fracture was in a fit condition for her to undergo, without interrupting it, an x-ray examination and operation to relieve her of the abdominal and bladder ailment, though she suffered therefrom during the period of delay

It is in like manner established that as long as the peg to any extent was in the hip bone, or passing into the bladder, and was not entirely within it, an operation to remove the peg was not only not advisable, but perilous to her fractured hip as well as to her health and life. Therefore, if Dr A, by an x-ray examination or otherwise, had sooner located it, such would not have authorized or justified its removal. And it should be conceded no sort of an examination that could have been made by any means or method whatsoever, would have alleviated the

pains in the abdomen and bladder and only an operation would have done so

The testimony establishes that the advisability of making any sort of an examination of her abdomen and bladder was to be governed by her entire condition, and not merely that of the abdomen and bladder, having due regard to her ultimate recovery from all of her ailments

The evidence abundantly establishes that at no time did the condition of her abdomen and bladder authorize or justify Dr A. to explore either by any method of examination, disregarding the condition of her hip. It was not at tempted to be shown by any evidence that the pain and suffering caused by the condition of the abdomen and bladder, required at any time the administration of a sedative. This fact is significant, and strongly tends to establish the soundness of Dr A's judgment not to sacrifice the treatment and care of the fractured hip, for the sake of sooner discovering the source or cause of the pains in the abdomen and bladder, though excruciating

Claim of Negligence in Administering Injections

A young woman consulted a specialist in Ear, Nose, and Throat work with respect to complaints of nasal and ear trouble. He examined her and found no pathology of the ear but found a discharge from the nasal sinuses. He took her into his operating room, administered a local anesthesia, and drained pus from the right antrum. He administered irrigation treatments to the patient from time to time for about ten weeks and then proceeded with a series of injections of protein by subcutaneous injections in the arm. Upon one occasion, she complained of a reddened area at the site of an injection and the doctor thereupon administered treatments to her with respect to an abscess which formed. It was necessary for him to open the abscess and drain a small amount of pus. When he last saw the patient, some five months after she first consulted him, she was generally in good condition and there was a very small scar left where the abscess had been.

A malpractice action was instituted against the doctor in which the charge was made that the defendant had broken a needle in administering an injection into the plaintiff's arm causing her great damage. The defendant denied that any needle had ever broken in connection with any treatment she had received. The case was never put on the calendar by the plaintiff for trial. After some time had elapsed, a motion was made to dismiss the action for lack of prosecution, whereupon, plaintiff's attorney stipulated to discontinue the action thereby acknowledging that no meritorious action could be established against the doctor.

the rim. He tells of the examination of more than 500 glasses from taverns, soda fountains, and restaurants which showed that only eight per cent of the glasses from the taverns twenty-two per cent from soda fountains, and thirty-five per cent from

restaurants met the standards of cleanliness required for milk bottles.

While we are thinking so strongly about the alarming spread of certain diseases that menace the public welfare here is something that might well engage our attention

More about Picking a Doctor

A RECENT PARAGRAPH in this department (July 15) treated the highly casual and haphazard ways in which families moving into new towns select a doctor—by asking hospitals, neighbors or telephone operators. A suggestion from Philadelphia was cited, to the effect that the County Medical Society print a list of physicians, giving location, type of practice, hospital affiliations, languages spoken, etc., to put in the hands of every family. The idea has aroused interest. A Westchester County doctor writes:

Your article in the last issue of the JOURNAL in "Across the Desk" entitled "Selecting a Doctor, a Live Problem" was very interesting.

The Philadelphia practitioner listed only three methods. I am sure other physicians could add other reasons, for new comers to a community selecting the physician of their choice. The following could be added

4 Selected because he is the school physician

5 Selected because he is the police surgeon

6 Selected because the 'real estate hostess' recommended him (In one community this hostess calls on new families taking up residence and recommends the physician of her choice.)

7 Selected because the hotel proprietor recommended him (In a community with several small summer and year-round hotels this is quite common.)

It is a live problem and could be taken up by the County Society and studied. It would be fair play if the above hostess" had a directory to hand to each new family.

I do not care to have this published over my name, unless you use initials E. S. only. It is merely a comment on your timely article in the last JOURNAL.

E.S.

Books

Books for review should be sent directly to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

ORDERING BOOKS

As a service exclusive to our readers, books published in this country may be ordered through the Business and Editorial Offices of the Journal (33 W. 42nd St., N. Y. C.) postage prepaid. Order must be accompanied by remittance covering published price.

RECEIVED

The Surgical Clinics of North America Volume 16, number 1, February, 1936 (Chicago number). Published every other month by the W. B. Saunders Company, Philadelphia & London. Per Clinic Year (6 issues) Cloth, \$16.00, Paper, \$12.00.

Allergy of the Nose and Paranasal Sinuses A Monograph on the Subject of Allergy as Related to Otolaryngology. By French K. Hansel, M.D. Quarto of 820 pages, illustrated. St. Louis, The C. V. Mosby Company, 1936. Cloth, \$10.00.

The Balanced Diet. By Logan Clendening. M.D. Duodecimo of 207 pages, illustrated. New York, D. Appleton-Century Company, 1936. Cloth, \$1.50.

My Life and Work. The Search for a Missing Glove. By Dr. Adolf Lorenz. Octavo of 362 pages, illustrated. New York, Charles Scribner's Sons, 1936. Cloth, \$3.50.

The International Medical Annual. A Year Book of Treatment and Practitioner's Index. Edited by H. Letheby, Tidy, M.D. & A. Rendle Short, M.D. Octavo of 555 pages, illustrated. Baltimore, William Wood and Company, 1936. Cloth, \$6.00.

Parenteral Therapy. A Ready Reference Manual of Extra-Oral Medication for Physicians, Dentists, Pharmacists, Chemists, Biologists, Nurses, Medical Students and Veterinarians. By Walter F. Dutton, M.D. & George B. Lake, M.D. Quarto of 386 pages, illustrated. Springfield, Charles C. Thomas, 1936. Cloth, \$7.50.

Clinical Heart Disease. By Samuel A. Levine, M.D. Octavo of 445 pages, illustrated. Philadelphia, W. B. Saunders Company, 1936. Cloth, \$5.50.

The Normal Diet and Healthful Living. By W. D. Sansum, M.D., R. A. Hare, M.D. & Ruth Bowden, B.S. Octavo of 243 pages. New York, The Macmillan Company, 1936. Cloth, \$2.00.

Animal Micrology. Practical Exercises in Zoological Micro-Technique. By Michael F. Guver. Fourth Revised Edition. Octavo of 331 pages, illustrated. Chicago, The University of Chicago Press, 1936. Cloth, \$2.50.

Neurological Surgery. By Loyal Davis, M.D. Octavo of 429 pages, illustrated. Philadelphia, Lea & Febiger, 1936. Cloth, \$6.00.

Is the "Common Drinking Cup" Still at It?

EVERYBODY HAS SUPPOSED that the "Common drinking cup" of yore was outlawed long ago. But the all-too-sketchy washing, or rinsing, rather, that the glasses get at the

Botsford. He points out in the *New England Journal of Medicine* that "the mucus from the mouth is so tenacious that a rinse in warm, or even fairly hot, water, even

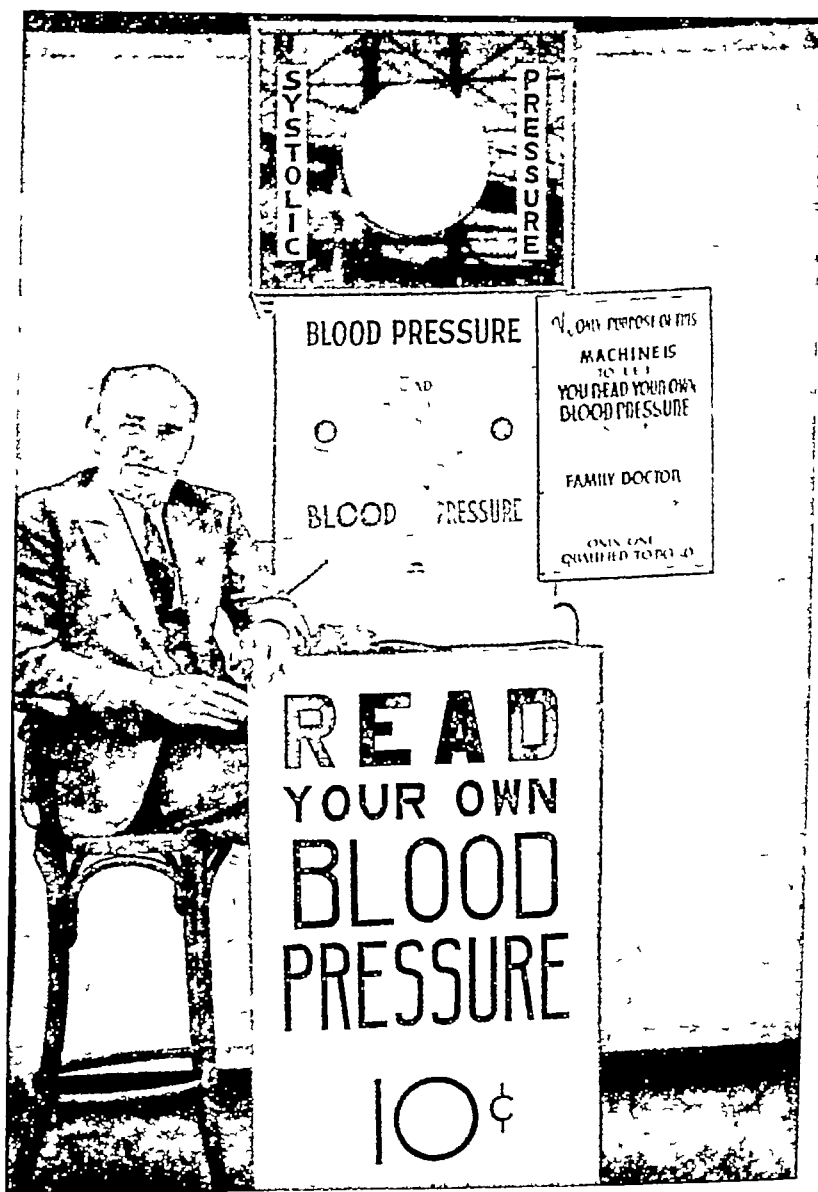


Photo through the courtesy of Sol Ullman, Assistant District Attorney
ONE OF THE BLOOD-PRESSURE DEVICES AT CONEY ISLAND (SEE PAGE 1271)

bar or soda-fountain today makes some people wonder if that old-time "common drinking cup" is not right here still, under a thin disguise. One authority who has his strong doubts about it is a retired health officer of Hartford, Conn., Dr. Charles P.

containing soap or other cleansing agent, has almost no effect upon it, and whatever germs have been left by previous users are passed on to those who follow." It takes some force, with a brush and really hot water and soap, to remove the mucus around

The Bacteriology of Typhoid, Salmonella and Dysentery Infections and Carrier States By Leon C Havens, M.D. Edited by Kenneth F Maxcy, M.D. Octavo of 158 pages New York The Commonwealth Fund, 1935 Cloth, \$1.75

Intended primarily for the epidemiologist and academic bacteriologist, this volume of 158 pages is an interesting, succinct and clear exposition of the modern knowledge of the enteric pathogens discussed. The mode of presentation commends it to laboratory workers wherever enteric infections exist as a major or minor problem. Moreover, the wise division into topics of procedural and general bacteriologic nature makes it possible for the practicing physician to avail himself of those chapters which throw new light on enteric infections as a public health problem. Clarity and simplicity of statement, combined with a background of extensive experience, renders the work a valuable contribution in its field. The untimely demise of the author, curtailing an eminently productive and useful career, is a most deplorable incident.

EMIL F KOCH

Modern Treatment in General Practice Edited by Cecil P G Wakeley, D.Sc. Volume II. Octavo of 382 pages, illustrated Baltimore, Wilham Wood & Company, 1935 Cloth, \$4.00

This second volume on therapy in general practice represents, like its predecessor, a compilation of articles that have appeared at various times in one of the British magazines. The list has been carefully selected for the needs of the general practitioner. There are 40 distinct contributions ranging from plastic surgery to carbuncles. Its scope is as may be expected quite varied and includes favorite prescriptions, practical hints, indications for surgery, reminders on some of the true benefits from surgery, a diagnostic guide, and a comparative evaluation of different known methods of treatment for some of the common maladies. In the chapter on physical therapy it is surprising to read that "there can be no doubt of the value of much of the technique of joint movement elaborated by osteopaths," for the reason that the rest of the book conforms to strict professional standards. The book is well illustrated with instructive drawings and photographs. Its nearest American counterpart is 'he International Clinics.

Considering the specialized fields which these prominent contributors represent it is gratifying that in their presentation of these important topics they have adopted the point of view of the general practitioner and have avoided involved discussions.

EMANUEL KRIMSKY

Russell A. Hibbs Pioneer in Orthopedic Surgery By George M Goodwin Octavo of 136 pages, illustrated New York, Columbia University Press, 1935 Cloth, \$2.00

This is an intensely interesting biographical sketch of the high points in the life of a truly great surgeon. It catches the fancy because it is such an intimate recital of incidents so characteristic of the man. That Russell A Hibbs has been dead over three years hardly seems possible, perhaps because of the vital, living, and progressive monument which he nurtured from a modest converted dwelling in 59th Street to the present modern institution—The New York Orthopaedic Hospital and Dispensary.

His was a full and earnest life, never dull, very intense at times, crowded with worth-while accomplishments, and crowned by national and international acclaim. He was a democratic man, modest about his attainments charming of manner, an ideal in the minds of his undergraduates, and an idol to the young surgeons fortunate enough to come under his personal tutelage.

The story is all too brief, but that is the way Hibbs would have had it—facts not fancy. His former students, the profession at large, particularly Orthopedic Surgeons, and the medical fraternity of the metropolitan area, not to mention the host of friends among the lay public, will read the book with avidity. It will recall Doctor Hibbs to them vividly, and they will be amazed at his accomplishments, for the author bares his magnanimity, while Hibbs purposely disguised his altruism, so that few knew of all the splendid accomplishments.

DONALD E MCKENNA

The Obstetric Pelvis By Herbert Thoms M.D. Octavo of 115 pages, illustrated Baltimore, Williams & Wilkins Company, 1935 Cloth, \$2.50

The author has written on this subject for more than a decade, and this monograph is a collection of his writings brought up-to-date.

Pelvimetry can be accomplished only by means of the roentgenogram.

He shows how a comparison of external pelvimetry with the true measurements of the inlet have no direct relationship. "My experience with roentgen pelvimetry has made me quite skeptical as to the emphasis which has formerly been given to external pelvimetry as applied to the pelvic inlet. Since the time of Baudelocque various observers have questioned the values of these procedures.

"A series of seventy-five pelves measured by ordinary pelvimetry and roentgenograms disclosed a maximum difference between the external and true conjugate of 10.0CM and a minimum of 5.5CM. Two cases

REVIEWS

Behavior Development in Infants A Survey of the Literature on Prenatal and Postnatal Activity 1920-1934 By Evelyn Dewey Octavo of 321 pages New York, Columbia University Press, 1935 Cloth, \$3 50

This work is a review of what is known about the development of human behavior. It takes in a period extending from 1920 through 1934. The contents are divided into 5 parts.

Part 1 deals with the behaviorist and Gestalt theories of behavior development, and attempts to present experimental evidence from animals to show that fetal behavior is similar to the development of behavior in animals. Part 2 deals with behavior of the human fetus. Part 3 concerns itself with neonatal behavior. In part 4 is a discussion of behavior during infancy. There is a final summary in which certain conclusions are drawn. The author points out that the development of behavior is coordinate with the development of neural structures. Also that maturation is essential to growth and function. There is an extensive bibliography.

This volume is an excellent reference book for those workers who are interested in the problem of the development of human behavior. It is concise and comprehensive. The reviewer recommends the book to the profession.

STANLEY S. LANM

Demonstrations of Physical Signs in Clinical Surgery By Hamilton Bailey, F.R.C.S. Fifth edition. Octavo of 287 pages, illustrated. Baltimore, William Wood & Company, 1935 Cloth, \$6 50.

In the introduction of the first edition of this worth-while book, 1927, the author refers to "the growing tendency to rely upon laboratory and other auxiliary reports for a diagnosis." He justifies his book by the statement that "the history and physical methods of examination must always remain the main channel by which a diagnosis is made."

This book, then, is essentially a demonstration of physical signs and while its usefulness has been proved for students of medicine it should be added to the shelves of the practitioner and the expert.

In this latest revision the 287 pages are divided into twenty-five chapters,—an anatomical division being followed for the demonstration of signs. There are no fewer than 341 illustrations, some in color, most of them modern and all of them pertinent and descriptive. The first impression is that the reader is in for a didactic exposition of the fundamentals of physical signs, but

as the many tricks of the experienced examiner are unfolded,—and illustrated,—one is soon convinced of the validity of the statement in the introduction of the first edition on the necessity for completeness and correctness of our physical findings.

JOSEPH RAPHAEL

Diseases of Women. By Harry S. Crossen, M.D. and Robert J. Crossen, M.D. Eighth edition. Quarto of 999 pages, illustrated. St. Louis, The C. V. Mosby Company, 1935 Cloth, \$10 00.

Crossen's "Diseases of Women" needs no introduction to the medical public. The book has long been a standard work, and each new edition has enlarged and embellished the old. The new eighth edition is no exception, and in it, are to be found, not only all the standard facts which should be in a text book on the subject, but also, a wealth of new information concerning the endocrine system, and its relation to the female genital organs.

The chapter on Gynecological Pathology is remarkably well done, and is beautifully illustrated by a large number of new photomicrographs. It is a veritable storehouse of information concerning the pathology of woman's reproductive organs.

This volume is arranged systematically as a text, but the various chapters are so clearly written and so well illustrated that it reads like a story book.

The new eighth edition excels previous revisions and all teachers and gynecologists should have this book in their library. It is of interest to read and it is invaluable for reference.

WM. SIDNEY SMITH

Handbook of Bacteriology For Students and Practitioners of Medicine. By Joseph W. Bigger, M.D. Fourth edition. Octavo of 458 pages, illustrated. Baltimore, William Wood & Company, 1935 Cloth, \$4.25.

This is an up-to-date revision of a very popular volume for student use in medical Bacteriology. Immunology and other related subjects are properly stressed. The bacteriologic and serologic methods given are elaborate without technician detail. The book occupies a neat position between textbook and the student "aid" and is completely inclusive of all important matter in proper proportion. The British source is not obtrusive and only evident in occasional geographical allusions. A minor criticism is evident in the absence of historical data and of source references. It is highly recommended for undergraduate utility and to anyone for rapid review of the subject.

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F B DOYLE

The Single Woman and Her Emotional Problems By Laura Hutton, B A Duodecimo of 151 pages Baltimore, William Wood & Company, 1935 Cloth, \$2.00

The restricted size and conversationally intimate atmosphere of this book should not mislead the reader into lack of appreciation. The problem of the unmarried woman, the female careerist, the "business girl," deserves considerably greater space than this physician dedicates to the subject, because the outstanding characteristic of social development in the machine age has been its almost demoralizing expansion of the female horizon. This has been true in business, industry, law, politics and the family. The effect of this astronomic revolution on the sexuality of unmarried women is hardly different from the sexual consequences of spinsterhood at any age, but the age tends to produce an enormously greater number of spinsters. The author approaches the problem from a strictly psychoanalytical point of view which is sober, understandable to anyone, plausible and helpful to those interested in the problem

SAM PARKER

Injury and Incapacity With Special Reference to Industrial Insurance By H Ernest Griffiths, M S Octavo of 270 pages Baltimore, William Wood & Company, 1935 Cloth, \$5.00

This book presents an entirely different aspect with reference to period of disability and permanent disability, which is not found in the average book dealing with the subject. In considering claims arising out of the Workmen's Compensation Acts, and in brushing up on court testimony, the book will be found invaluable. The discussion set forth in the various chapters has been based partly on the author's personal experience, and partly on an analysis of 50,000 consecutive cases of accidents that were re-

ported by an insurance company which deals mainly with claims arising out of the Workmen's Compensation Acts

This work also includes a comprehensive study of actual working conditions. The author bases his opinion as to a man's ability to perform his particular work, upon his own knowledge gained from study and familiarity with the type of work involved

R F HARLOW

Short Wave Therapy and General Electro-Therapy By Heinrich F Wolf, M D Octavo of 96 pages, illustrated New York, Modern Medical Press, 1935 Cloth, \$2.50

The author of this small compendium is one of the pioneers of scientific physical therapy in this country. In his large experience he has encountered the existing lethargy of the general medical profession regarding this form of therapeutics. Numerous illustrations describing the use of various electro-therapy apparatus, the application in individual cases, indications and duration of treatment are given.

As a primer in electrotherapy, it is an excellent little book. For the uninformed this volume offers by its graphic illustrations an easy method of acquiring the basic principles of electrotherapy

The reviewer regrets to state that the title is somewhat misleading. This volume does mention a few of the theories of short wave therapy and some of its methods of application, but this new form of therapy is still in the experimental stage, and there is not sufficient evidence of its real action and worth to be positively featured in a volume on physical therapy. It would have been better to have called the work a primer of general electrotherapy

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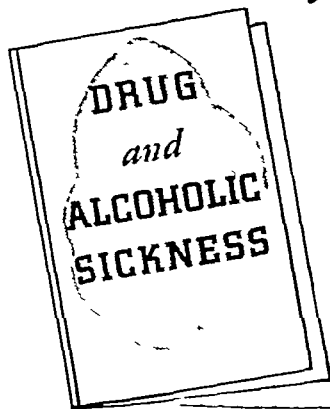
A brochure prepared and copyrighted 1936 by the American Can Company. The educational material in this book is acceptable to the Committee on Foods of the American Medical Association. Booklet on request by writing the American Can Company, 230 Park Avenue, New York, New York

Prepared primarily to inform the public, this booklet of 34 pages has information which will interest many physicians. The chapters on "Food in the Open Can" and "The 'Ptomaines'" are designed obviously for lay consumption, but the chapters on "Vitamins in Canned Foods" and "Canned Foods in Infant Nutrition" are well worthy of attention by the M D. The material is well written, and the technical processes of canning and sterilization are explained in simple, readily understandable English. The treatise on Botulism is one that should be called to the attention of patients

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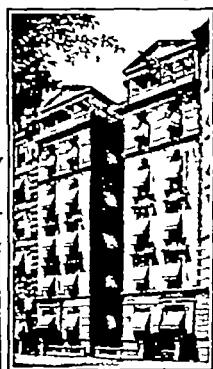
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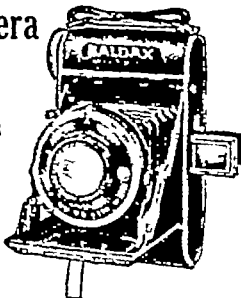
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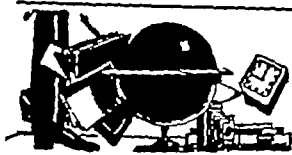
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A school providing this advanced instruction is called a *Junior College*. Under this plan students in the third and fourth years of high school make up the Lower Division and are classified as freshmen and sophomores, respectively, and those in the first and second years of college constitute the Upper Division and are classified as juniors and seniors. Graduation follows the successful completion of the prescribed courses of study in either division. An advantage is that in the comparatively small classes of the Junior College the student is in competition with a smaller number of those who have come from high schools. If he has the elements of leadership he has an opportunity to develop them. If he is backward and indifferent he has the personal attention of members of the faculty and may be helped to discover latent abilities.

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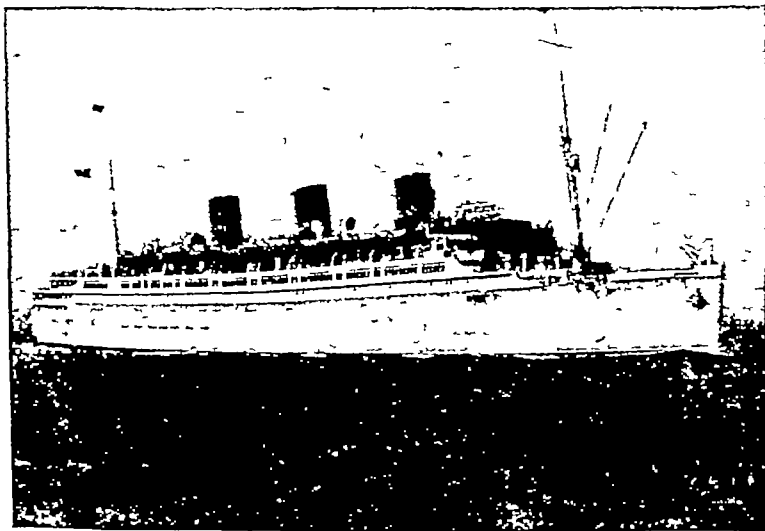
Secretary of State Praises the American Export Line

Plans by the American Academy of Ophthalmology and Otolaryngology for its post convention cruise in October to Bermuda aboard the famous "*Monarch of Bermuda*," is being closely rivaled by the plans for receiving the members of the cruise by the Bermuda Trade Development Board

Joseph J. Outerbridge, secretary of the Board, announcing that body's deep interest in the visit of "these eminent doctors in Bermuda," offers assistance in organizing a program so they will get the most out of their two-day stay. Cooperation with the manager of the Castle Harbour hotel in this connection has also been assured

Appreciation of the American Export Lines' service during the past month in evacuating American citizens from the troubled areas of the Spanish Civil War, was officially expressed in a letter from Cordell Hull, Secretary of State, who wrote

"I want to tell you how deeply I appreciate the fine spirit of cooperation which you and your company have shown in helping the Government in connection with the present disordered condition in Spain. The evacuation work which was done by the *S.S. Exeter* and the *S.S. Exochorda* has been invaluable and except for your cooperation and help, we could not have effectively met the situations which



The well known *Monarch of Bermuda*—cruise ship of the American Academy of Ophthalmology and Otolaryngology's Bermuda Post Convention Cruise October 3 to 9

The Golf party, announced in the last issue of the JOURNAL, is to be held at the Mid Ocean Golf Club, reports Dr. William P. Wherry, Executive Secretary-Treasurer of the Academy.

To date over 150 reservations have been made for the cruise, and many more are anticipated. The cruise climaxes in rather a fine style, the 1936 Convention which is to be held in New York City from September 26 to October 3, the steamer sailing in the afternoon of the last day.

Complete details may be had from Dr. Wherry, 1500 Medical Arts Bldg., Omaha, Neb., or the Travel Dept. of the JOURNAL.

arose at Barcelona and Palma. I want you to know also that the splendid assistance rendered by your vessels to nationals of other countries has resulted in my receiving the formal thanks of other Governments for having aided in the evacuation of their nationals."

Like the exploits of the Clipper Ship era when American seamen added daring and ingenuity to the annals of the Seven Seas, the seamen of the American Export Lines have again brought credit to the American Merchant Marine and their flag. Lamenting that it requires a crisis to familiarize our people with the progress and seamanship of American

Classified Index of Service and Supplies

(Continued)

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and with very few failures to maintain their schedules, constitutes for the railroads of his country one of the greatest achievements in recent years. To operate at an average of 60 miles and over, it is necessary for trains to run at considerable higher speeds owing to stops that must be made at intermediate points."

By the increase in the speed of various trains operating between Chicago and the Pacific Coast those runs are now made in approximately 21 hours less time than in 1930. Between Chicago and St. Paul there has been a saving due to increases in speed of nearly four hours, while between New York and St. Louis the running time of trains has been reduced by nearly two hours compared with 1930. Reductions in the schedules have also been made between New York and Chicago, New York and Washington, Chicago and New Orleans, New York and Miami, and scores of other cities including St. Louis and various points in Texas.

* * *

Ecuador Decorates Grace Line President

D Stewart Iglehart, president of W R Grace & Co and Grace Steamship Company, has received at the hands of Senor Don Colon Eloy Alfaro, Minister of Ecuador, the Decoration of the National Order of Merit of that country, with the rank of Commander.

The decoration was bestowed in recognition of his services in the development and improvement of transportation between North America and Ecuador. This has been accomplished through constant betterment of Grace Steamship Line service during the past generation, and more recently in the development of Pan American-Grace Airways. Six sailings a month on the New York-Guayaquil run are now provided.

As part of the Pan American Airways System, the Pan American-Grace Airways makes it possible for travellers to reach Buenos Aires from Ecuador in less than twenty-three hours' flying time. The trip between Ecuador and New York has been cut to two and a half days.

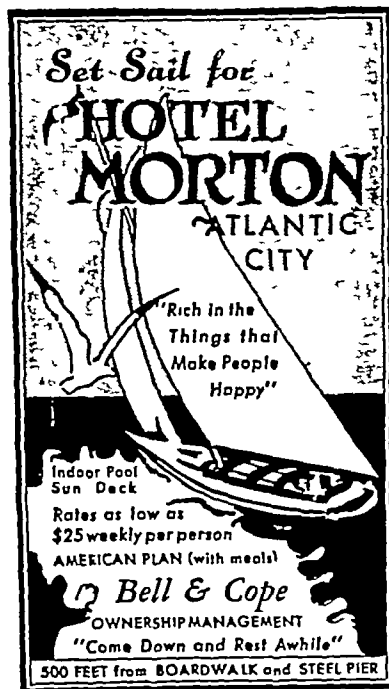
Mr Iglehart has spent his entire business life with W R Grace & Co in the South American trade. Recently, he was also decorated by Peru with the Order of the Sun.

(Continued on page xxxii)

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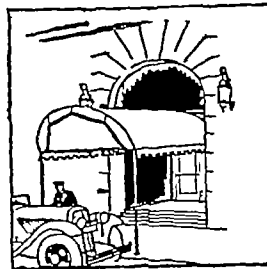
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* * *

Asbury Continues Impressive Events

During the month of August, Asbury Park has had many splendid attractions started by the Biblical Pageant "Ruth", and followed by the annual beauty exposition when the leading beauty stylists from all parts of the country met for a pre-season display of the new beauty fads, the annual indoor tennis matches at the Convention Hall, and the first annual get-together of the employees of Radio City, New York.

Introducing a new angle in the field of sports, America's Ricksha Champion is scheduled to be crowned on Sept. 2nd when contestants in the fifty-five mile relay wind up their grueling grind at the mammoth convention hall on the boardwalk.

Presented for the first time along the beachfront here this season, the Rickshas drawn by college athletes who found them a fine means of keeping in training, this form of transportation for short jaunts proved very popular among the throngs of visitors.

Individual claims of supremacy made by various Ricksha pullers, resulted in the American Legion Post taking a hand to determine once and for all who is the champion American Ricksha Puller.

* * *

U S Has Fastest Train Service

The United States not only has the fastest trains for distances of 800 miles or more, but has a greater number of trains with scheduled runs of 60 miles per hour or more than any other country in the world, J J Pelley, president of the Association of American Railroads, declares.

"The increase in this country in the past five years in the speed of trains operating on fast schedule is without parallel," says Mr Pelley. "More than 400 trains covering in excess of 19,000 miles at the beginning of this year operated on scheduled runs timed at 60 miles an hour or better, compared with 30 regular runs operating for a total distance of 1,100 miles in 1930. The fact that many of these trains operate daily over long distances

Mannequins Under Water

This unusual sight will be one of the features of the National Fashion Show to be held in the municipal convention hall at Atlantic City, September 11th, in connection with the Showman's Variety Jubilee.

Sixty girls from all sections of the country competing for the title "Miss America 1936", will model fall and winter fashion creations of the nation's leading designers and manufacturers.

Wearing these frocks, the girls will appear under a driving rain. But they will emerge from the water on the stage and pass down the runway perfectly dry. Every item in milady's wardrobe will be shown in this scene, each made by a new water resisting process.

The fashion show is only one of the many features of the Jubilee which opens September 8 and continues to the 14.

Hotel grilles, night clubs, motion picture theatres, and the various piers continue to present special programs for the entertainment of lovers of Atlantic City. The Garden Pier shows late Broadway hits, the Steel Pier features famous orchestras, radio stars and many novel shows or exhibitions, while Young's Million Dollar Pier offers entertainment and its famous net hauls.

The facilities of the Atlantic City Tuna Club is still being taxed to care for the many enthusiasts who come in search of the game fish. The Inlet Yachting Club too, reports that the party fishing boats are doing three times the business of last year.

* * *

"Queen Mary" to Have a Sister

Cable advices to the offices of the Cunard White Star Line, confirmed reports that a sister ship to the *Queen Mary* has been contracted for.

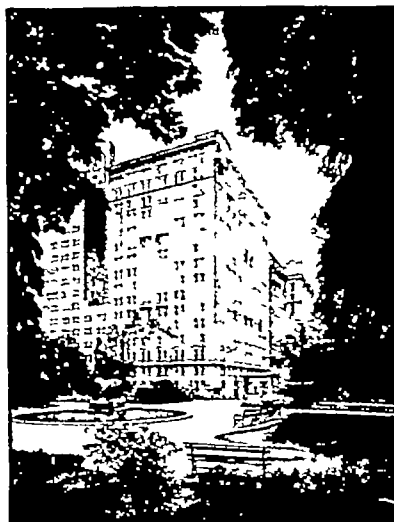
Temporarily designated as "Number 552", the new steamer will have approximately the same dimensions and speed, designed to maintain regular service runs at about 28½ knots which enables a complete round trip crossing every two weeks with allowances for stopovers at each port. As a counterpart of the great ship which has already aroused a tremendous interest, the new ship will be approximately the same overall dimensions as the *Queen*.

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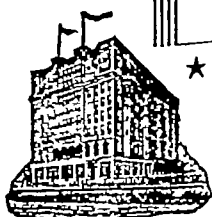
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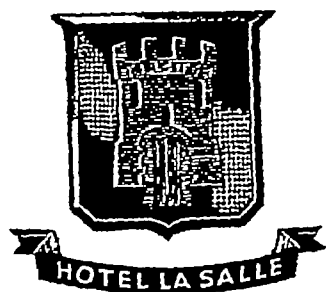
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Mary, and the gross tonnage not very different. It will probably be launched during the year 1938 (with delivery schedule for early 1940)

Rumor has it that the proposed superliner will be christened the "King George" in which case the *Queen Mary* will have a brother and not a sister as stated

* * *

C P R Locomotives Capable of 110 MPH

When the Canadian Pacific Railway took over the first of a series of five new railroad locomotives—speedy, light, semi-streamlined engines capable of 110 miles an hour, a new prosperity note was sounded at Montreal in July

After the stage had been set by speeches of Sir Edward Beatty, GBE, chairman and president of the CPR, Mayor Camilien Houde, of Montreal, W C Dickerman, president of the American Locomotive Company, and J N Burke, a veteran engineer, the new locomotive came into view crashing through a huge painting of an old-type engine

The new locomotives are much lighter than the most recent Canadian locomotives, but their power has been increased in ratio to the weight to give them a speed capable of 110 miles per hour. They are steam driven, which according to the American Locomotive Works representative, has many advantages in good railroading and provides all the power and speed any railroad will ever dare use.

* * *

Modern Roads First Created in England

November 26th marks the centenary of the death of John Loudon McAdam, the great road-maker from whom the name of the surface used extensively in this country is derived, for McAdam's achievement is perpetuated in the word "macadam"

He and Telford, both Scotsmen, revolutionized the English highway. Telford's method was to excavate the course of the road, and lay a solid foundation of stone blocks seven inches deep, laid side by side and packed with chips at the joints. Over this pavement he laid a six-inch layer of hard stones, with a two-inch layer of gravel or small stones on top

(Continued on page XXV)

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McAdam, on the other hand, distrusted the pavement foundation. He held that if sound materials were used and the road well drained, it could be laid down on the ordinary subsoil without Telford's fundamental pavement, which he considered actually inadvisable, since the shifting of the stones in time allowed water to collect between them and undermine the road. He preferred an elastic foundation to a rigid one, for which he was much ridiculed, but the success of the roads he laid on a well drained subsoil proved the soundness of his theory.

On such a foundation, he laid a ten-inch layer of broken stones less than six ounces weight which gradually became bound by the traffic into a reasonably waterproof surface, a slight lateral curve helping to throw off the rain. Later a light roller and water-cart substituted "water-bound" for "traffic-bound" macadam, and this composition was equal to all strains put upon it by iron-wheeled vehicles.

* * *

Painter of Indian Life made "Blood Brother" of Canadian Tribe

Before the largest crowd of motor tourists and visitors who have ever attended the annual celebration of "Indian Days" at Banff in Canada, George Bertrand Mitchell, well known American artist and painter of the life of the red men, and vice-president of Albert Frank-Guenther Law, Inc., was officially made a "blood brother" of the Stoney Indians, Bear's Paw tribe.

For years during his visits, artist Mitchell was known as "Em-bis-ka-toe" (Gray Eagle), but with his induction by ritual into the tribe his name has been changed to "O-Hassie-Na-na" (Beautiful, Spotted Cloud). When the Nordegg branch of the tribe returns to the reservation, O-Hassie-Na-na will go with them sketching painting, and photographing them en route.

Mr Mitchell has motored, hiked, and ridden horseback through the Canadian Rockies for the last quarter of a century. In his capacity as dean of travel advertising men in the United States, he inaugurated a campaign four years ago by which a great railway promoted travel by motor car to eastern Canada—the only time in the history of transportation when a railroad deigned to lend a helping hand to assist rival means of locomotion.

In his artistic activities Mr Mitchell is a member of the Mystic, Conn Art Association, the Salamagundi Club, and New York Water Color Society, and has exhibited in the United States and Canada.

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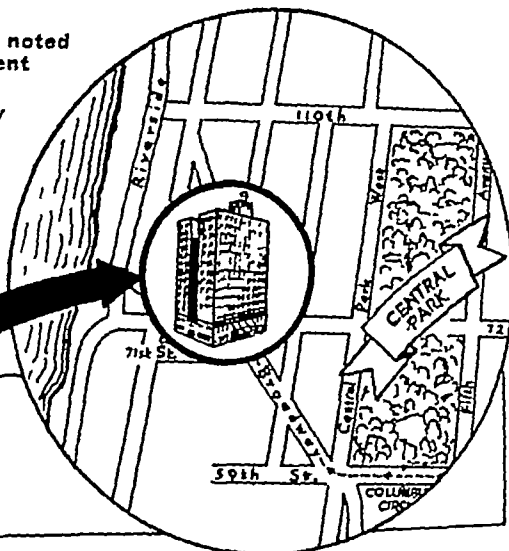
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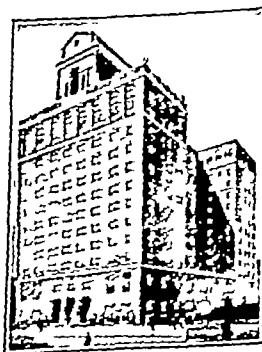
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Record Predicted in 1937 for NYK Line

Officials of the N Y K Line of the Pacific are predicting an all-time travel record for 1937, basing the forecast upon the expectation of still greater business improvement, and the fact that the Eucharistic Congress at Manila is bound to draw thousands of visitors from all parts of the world

The *MV Tatsuta Maru* and the *SS Empress of Japan* are scheduled to leave Los Angeles in January with 'round-the-world parties and to arrive at London in May in time for the coronation

And still another incentive to Far Eastern travel in 1937, is the seventh biennial Conference of the World Confederation of Education Associations, which is to be held in Tokyo, August 2 to August 7, and which is naturally expected to attract teachers from all countries as well as a vast audience of laymen interested in education

* * *

Travel Brevities

REGISTRATIONS at the Ambassador in Atlantic City recently included the following Dr and Mrs H Newman, and Dr and Mrs Budd Reaser of Pennsylvania, Dr Lewis Chalfin and Dr Jacque Chalfin from Ohio, Dr and Mrs T F Colgrone of New York, and Dr John H Genau from the District of Columbia

A POPULAR SOUVENIR of Trinidad is a cane made from the spine of a shark Making these canes is a thriving business in Trinidad The bones are three-quarters of an inch long and are held together by a length of stout wire which hold them rigidly The bones are perfectly round The indentations give them a lacework appearance

RECENT SAILINGS to Bermuda aboard Furness Bermuda steamers listed among passengers, Dr and Mrs John W Price, Jr of Kentucky, and Dr and Mrs H G Ebling of Maryland

TO MOST PEOPLE "landfall" is a puzzling word Major H Mac Lochlan Bell, in his book, "Bahamas Isles of June," explains it this way

"Landfall, a term non-seagoing folks find it difficult to understand, simply means the first sight of land from the sea"

DOCTORS STOPPING at the Lexington in New York during the past few days were—Dr Gardner H Norton of Massachusetts, Dr E F Wood of Pennsylvania, Dr W H Flynn of Connecticut, Dr E B Hobbs of Kansas City, Dr Brock McG Dear of Connecticut, Dr Albert Duvall of New Jersey, Dr C E Steyer of Ohio, Dr G D MacIntyre of Canada, Dr H C Morgan of California, Dr F E Chauvin of New York, Dr M L Perkins of California, Dr W R Mead of South Carolina, and Dr A L Courville of Maine

Drs P Parillo, F L Sullivan, N Goldenberg, M Levitan, D F Luby, P P Britt, Edw Walter, F F Lyon, Edw Kivovits, and W F Schneider, from New York, A Van Blyden Musaph-Stern of Holland, J R Graves of Florida, M Pijoan and E E Bowen of Massachusetts, A S Johnson of North Carolina, J R Peobody of Kentucky, Wm F Roberts of Connecticut, Paul Kaczander of Germany, and P D Mayock of Pennsylvania—were also registered

THE MIGHTY RHINE RIVER, flowing through half of Europe is camouflaged when it reaches Holland The traveler need not ask, when in Holland, where is the Rhine? Not even the natives know The river branches into many outlets when it reaches Dutch soil, and each outlet has been given an individual name, the Dutch avoiding the use of "Rhine."

AMONG THOSE on recent Grace Line steamers sailing and returning were—Dr and Mrs C B Vaughan of Massachusetts, Dr and Mrs Benjamin Weiss of New Jersey, Dr and Mrs I A Kuehner of Pennsylvania, and Dr and Mrs Jose Gonzalez of Maryland

VLADIVOSTOK, at the eastern end of the world's longest railroad owes a great part of its recent growth to the World War Normally, before the war, the city had about 50,000 inhabitants A recent census gives its population as 128,000 Here Russia maintains a huge arsenal

DOCTORS who have found it very pleasant at the St. George Hotel Beach and Golf Club in Bermuda this past month are—Dr F S Osmun and Dr E Schwenk of New Jersey, Dr R A MacCready of Massachusetts, Dr Abraham Cohen of New York, and Dr Chas M Sigal of Ohio

OF AMERICAN SHRINES in England, none makes a stronger appeal to the visitor than Sulgrave Manor, in Northamptonshire, the early home of George Washington's ancestors

(Continued on page xl)

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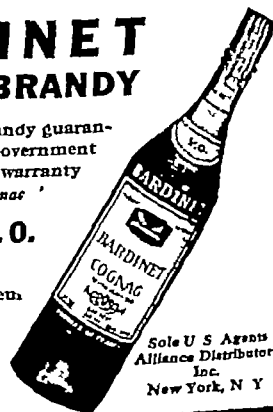
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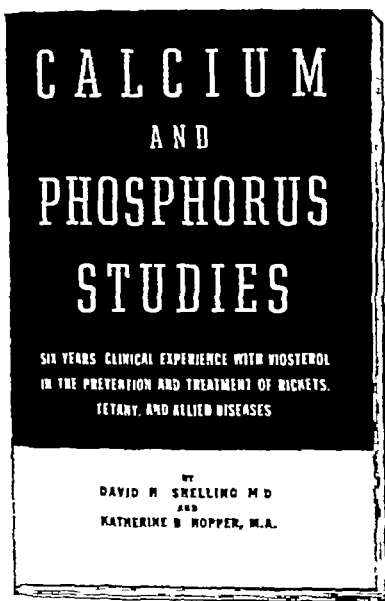
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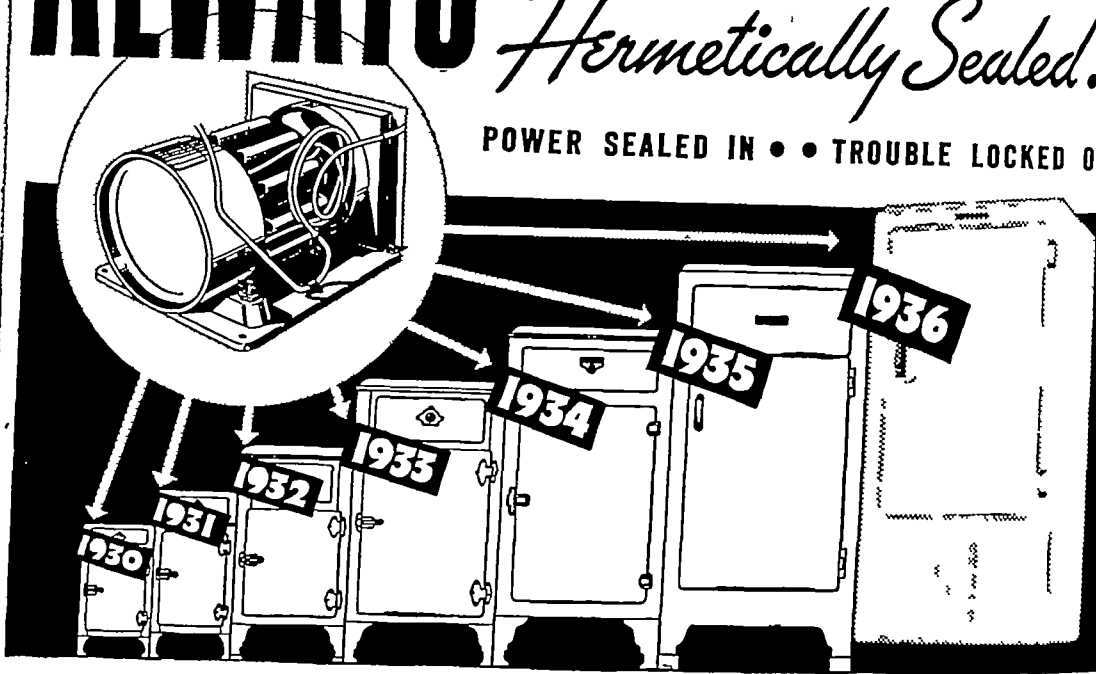
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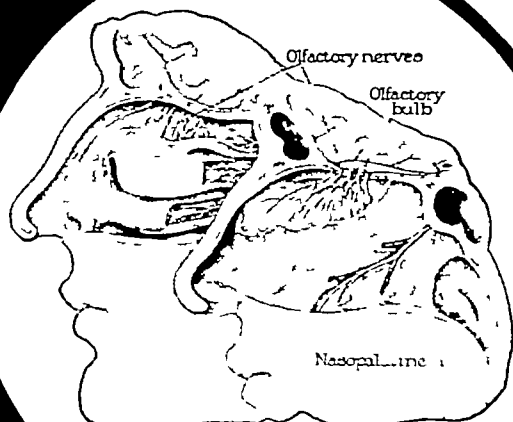
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Before a man or woman is added to the Camp field staff, he or she has usually had some form of professional training or experience. Some are graduate nurses. Others have studied medicine. Several have been associated with manufacturers who market other types of products to physicians. All, however, regardless of their previous experience, receive at the Camp factory a thorough course of training in the purpose of supports in general, and the design and construction of Camp supports and their application in particular. Before a member of the field staff is granted a territory, he works with an experienced traveler for a period of a year, after which he is closely supervised.

As new considerations for better supports are presented—and this is being done continually—and finally amalgamated into the manufacture of a new series of supports typed to body build, it is necessary of course to inform those who sell Camp supports of these new developments. Frequent broadcasts from the Camp medical advisory board and the Camp designing staff are therefore sent to the Camp field staff. All members of the field personnel are called in for conference at district headquarters several times each year and usually to the factory in Michigan during the summer for additional meetings and discussions.

Thus is maintained an informed field staff, available for consultation at any time and at any place—a staff whose sole responsibility in selling Camp supports is to foster that entente with the profession which S. H. Camp and Company has treasured jealously in the past twenty-seven years.

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CHICAGO, NEW YORK, WINDSOR, CANADA, LONDON, ENGLAND



Accepted by the Council on Physical Therapy
of the American Medical Association

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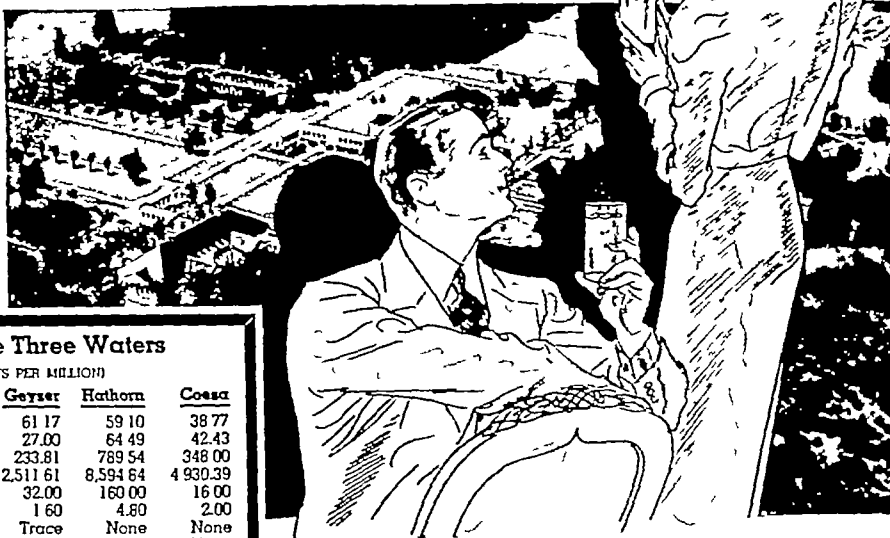
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THE WATERS OF SARATOGA SPA



Analysis of the Three Waters

(MINERAL PARTS PER MILLION)

Hypothetical Combinations	Geyser	Hathorn	Coesa
Ammonium chlorid	61 17	59 10	38 77
Lithium chlorid	27.00	64 49	42.43
Potassium chlorid	233.81	789 54	348 00
Sodium chlorid	2,511 61	8,594 64	4 930.39
Potassium bromid	32.00	160 00	16 00
Potassium iodid	1 60	4.80	2.00
Sodium sulphate	Trace	None	None
Magnesium sulphate	None	None	None
Sodium metaborate	Trace	Trace	Trace
Sodium nitrate	Trace	Trace	Trace
Sodium nitrite	Trace	Trace	Trace
Sodium bicarbonate	2,206.54	424 71	433 70
Calcium bicarbonate	1 877 09	3,380 84	2,545 74
Barium bicarbonate	Trace	25 65	39 03
Strontium bicarbonate	Trace	Trace	Trace
Ferrous bicarbonate	23 15	40 07	14.25
Magnesium bicarbonate	874 71	2,244 88	1,378 52
Alumina	1.59	4 93	2.70
Silica	6 60	14 40	9 60
Total	7,856.87	15,808.30	9,801.22

This means that an 8 oz tumbler of Geyser Water for instance contains 28 grains of minerals of which 18.2 are acid-forming bicarbonates. Other mineral rich waters boast when they can show 3 grains.

Look for the Seal of The State of New York on every bottle of the genuine waters of Saratoga Spa

GEYSER the alkaline water tends to aid digestion and correct acidity

HATHORN is a saline-alkaline purgative and tonic.

'COESA' mildly laxative and diuretic is also an aid in gallbladder liver and certain digestive disorders

All are highly mineralized and sparkling with natural carbonation



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Walter S McClellan M D, Medical Director

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ments is worthy of your
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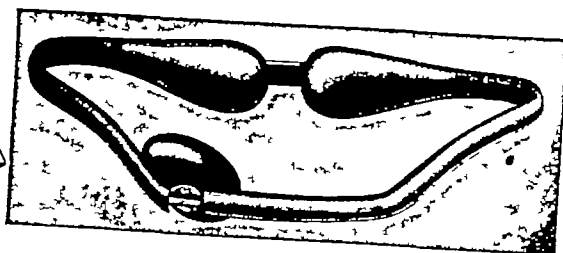
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Send for a sample

G. CERIBELLI & CO.

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A Well Tolerated Myocardial Stimulant and Diuretic
Available in 7½ grain tablets and as a Powder...



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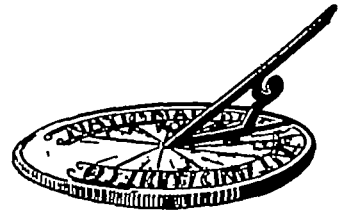
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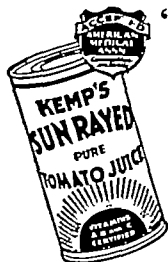
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"MAKE a tomato juice that I can recommend with confidence," said a physician to the three Kemp brothers in the summer of 1924

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J. OF SOC. HYGIENE 21:317 (OCT.) 1935

Reprinted from The Journal of the American Medical Association
April 21 1934 Vol. 102 No. 1160-1172

STANDARD TREATMENT PROCEDURE IN EARLY SYPHILIS A RESUME OF MODERN PRINCIPLES

JOHN H. STORES, M.D., PHILADELPHIA
HAROLD N. COLE, M.D., CLEVELAND
JOSEPH EARLE MOORE, M.D., BALTIMORE
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LIDA J. USILTON, M.A., WASHINGTON, D. C.
AND
R. A. VONDERLEHR, M.D., WASHINGTON, D. C.
Associate Editors
FOR THE UNITED STATES PUBLIC HEALTH SERVICE

This presentation of a uniform type of procedure in the treatment of early syphilis is the product of a genuinely massive investigation of world-wide scope, sponsored by the League of Nations Health Organization and carried through in the United States by the combined efforts of the United States Public Health Service and a group of five university clinics aided by the generosity of several donors. The material embraces the records of 75,000 cases of syphilis, of which 3,244 were examples of early syphilis followed for as long as six months or more. These figures, while themselves impressive, express an aggregate more than any as yet fully evaluated in the history of medicine, and are entirely capable of serving as a basis

1 Scheme of Treatment for Early Syphilis

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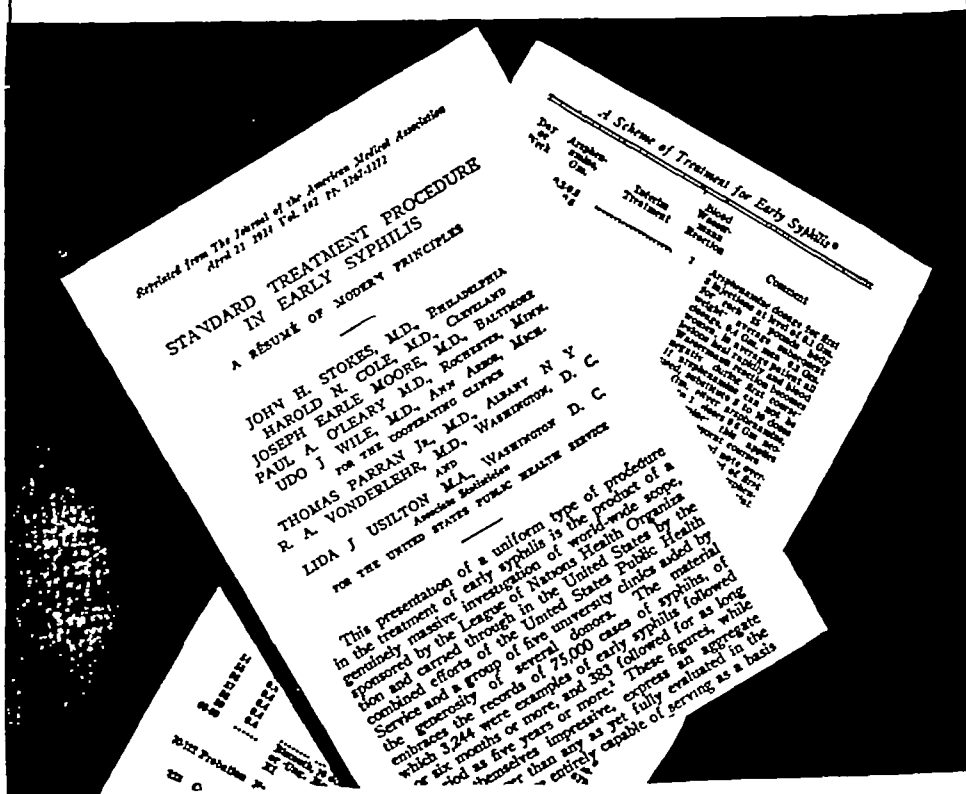
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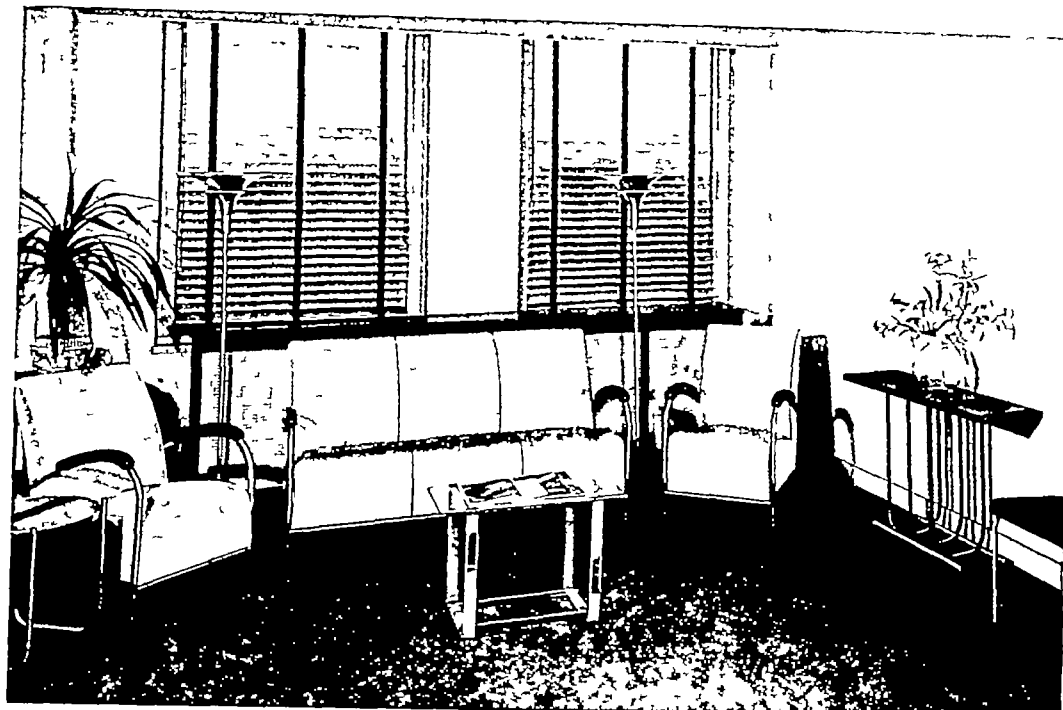
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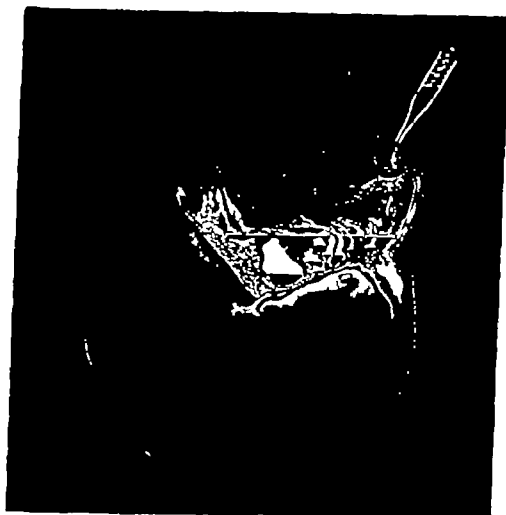


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THE ROLE OF THE THYMUS AND PINEAL GLANDS IN GROWTH AND DEVELOPMENTL G ROWNTREE M D J H CLARK, M D ARTHUR STEINBERG N H EINHORN,
M D, *Philadelphia, Pa*, and ADOLPH M HANSON, M D, *Faribault, Minn**From the Philadelphia Institute for Medical Research, the Samuel Bell, Jr Laboratory, in the Philadelphia General Hospital, the Laboratories of the Philadelphia General Hospital, and the Hanson Research Laboratory, Faribault, Minn*

During the past three years we have been conducting certain experiments designed to throw additional light on the functions of the thymus and pineal glands. In each series of experiments the same basic principle has been adhered to, namely, a continuation of the adopted procedure through succeeding generations of rats. This has involved (1) the injection of thymus extract (Hanson), (2) the ablation of the thymus glands, (3) thymectomy, with replacement therapy, by injection of thymus extract, (4) thymectomy, with replacement therapy with thymus implants, (5) frequently repeated homologous thymus implants in normal animals, (6) the effects of radiation on the thymus gland, (7) the injection of pineal extract (Hanson). A brief outline is presented of the effects to date of these various procedures.

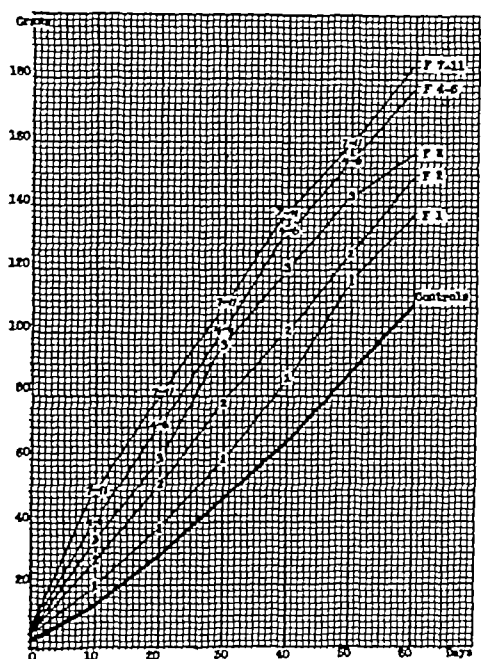
1 The Effects of thymus injection For the past three years we have been continuing the daily intraperitoneal injection (1 c.c.) of thymus extract, originally prepared by Hanson, through successive generations of white rats (Wistar strain), and are now in the twelfth generation. During this period there have been 1240 litters born yielding more than 8,000 rats. There resulted accruing acceleration in the rate of growth

and development in succeeding generations. It should be acknowledged that these results were not obtained without temporary setbacks in our experiments, as not infrequently we found that, for one reason or another, we were using inert extracts, which failed to produce the expected acceleration in growth and development. A chemical analysis of the potent and inert extracts showed us that potent extracts were relatively rich in iodine reducing compounds, which we have expressed in terms of glutathion. Unless these extracts were maintained at a relatively low pH (around 3.8-4.2) there was, with the lapse of time, a rather rapid decrease in the content of the glutathion-like substance, until the extract was entirely impotent. Again, extracts prepared at various times in the Institute in exactly the same manner, yielded widely different values for the glutathion-like substance, and also variable biological results. After experimenting these last two years with the preparation of the extracts, we have arrived at a point where we can obtain the best and most constant results by using the neck thymus glands of four weeks' old, locally raised, milk-fed calves, obtained from certain dealers in the central eastern part of Pennsylvania. The final extract is adjusted to a pH of 3.8-4.2, which seems to yield optimal stability. The number of animals now under study necessitates the

This work was supported by a grant from the Penrose Fund of the American Philosophical Society. We wish to acknowledge, with gratitude, the financial assistance given Dr. Hanson by the Josiah Macy, Jr. Foundation. The investigations involving thymectomy, implants in normal animals and pinealectomy were

carried out in collaboration with, and replacement therapy independently by Dr. Einhorn. Part of thesis studies submitted to the Faculty of the Graduate School of Medicine of the University of Pennsylvania, in partial fulfillment of the requirements for the degree of Doctor of Medical Science (ScD Med).

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, April 29, 1936

CHART I—WEIGHT CURVES OF THYMUS
TREATED RATS WITH THEIR CONTROLS

The control is based on 400 animals, observed over a period of three years. The F_1 , F_2 and F_3 groups are based on several hundred animals each. The curve incorporating F_4 to F_6 represents the combined average for these three generations—based on several hundred animals. The curve incorporating F_7 to F_{11} represents the combined average for these four generations—based on several hundred animals.

preparation of new extract at least once a week, which tends to insure both freshness and potency.

An attempt has been made to assay each batch of thymus extract immediately after its preparation, utilizing the quantitative method of Woodward and Fry for the amount of sulphhydryl. With the same procedure, utilizing different thymus glands, the yield of sulphhydryl has varied from almost zero, in the case of extracts prepared from the glands of starved animals, to ninety-four mg per cent from glands of locally raised, milk-fed calves. This procedure has permitted the rough standardization of the extract and, in addition, the opportunity, through utilizing the test at weekly intervals, for the determination of the rate of its deterioration. As a result it has become evidence that potent extracts preserved in soft glass containers, either with or without refrigeration and with or without chlorbutanol, deteriorate rapidly, so that at least one-half of the potency is lost in the course of a month. Infection of the extract with either bacteria or moulds leads to rapid deterioration and often to putrefaction and the sulphhydryl disappears entirely. These observations are of the greatest significance in explaining the success or failure to obtain consistent biological effects on the rate of growth and development. No biological effect has ever been observed with solutions containing less than fifteen mg per cent.

The exact nature of the active principle present is not known. The possibilities that glutathion, cystein, cystin, and glutamic acid

TABLE I—DEVELOPMENT OF THYMUS TREATED RATS AND THEIR CONTROLS

	Controls	F_1	F_2	F_3	F_4	F_5	F_6	F_7	F_8	F_9	F_{10}	F_{11}
Aver Birth Wgt. (gm.)	4.6	5.1	5.3	5.3	5.6	5.5	5.6	5.5	6.5	6.0	5.6	5.7
Ears opened (days)	21-34	2-3	2	1-2	1-2	1-2	1-2	Birth	Birth	Birth	Birth-1	Birth-1
Incisors Erpts. (days)	8-10	8-9	4-6	4-6	2-3	2	1-2	Birth	Birth	Birth	Birth-1	Birth-1
Hair Appd. (days)	12-16	10-12	4-6	4-6	2-3	2	1-2	1-2	42-48	42-48	42-48	42-48
Eyes Opened (days)	14-17	12-14	4-6	4-6	2-3	2-3	2-3	42-48	42-48	42-48	42-48	42-48
Testes Descd. (days)	35-40	15-29	15-21	10-12	6-10	4-6	3-10	3-4	16-18	16-18	6	6
Vagina opened (days)	55-62	30-45	23-32	21-27	18-20	18-20	16-20	16-18	16-18	16-18	6	6
Pregnant (days from birth)	80	70	56	42	25	40	46	37	22	55	42	38
First Litter Cast (days from birth)	102	92	78	64	47	61	68	59	43	77	64	60

TABLE II—COMPARISON OF SOMATIC DEVELOPMENT IN SUCCESSIVE GENERATIONS OF
THYMECTOMY TEST STRAIN OF RATS WITH CONTROLS

	Ears Open	Teeth Erupted	Hair Appeared	Eyes Open	Testes Descended	Vagina Open
Operative Controls	2-3 (2.9)	7-10 (8.5)	11-14 (12.5)	13-17 (15.2)	24-35 (30.2)	39-50 (44.3)
F_1	3-4 (3.4)	8-11 (9.4)	13-18 (14.8)	14-18 (15.9)	24-35 (30.4)	38-53 (45.1)
F_2	2-4 (3.3)	8-11 (9.5)	12-16 (14.2)	15-18 (16.2)	24-36 (30.7)	42-61 (52)
F_3	3-4 (3.3)	8-11 (9.5)	12-16 (14.2)	15-18 (16.2)	24-36 (30.7)	42-61 (46.5)
F_4	3-4 (3.5)	9-11 (10.2)	12-16 (14.4)	16-19 (17.1)	28-36 (31.2)	42-54 (46.8)

are concerned are being ascertained through the administration of these amino acids, to successive generations of rats. Mild suggestions of precocity have attended the use of large amounts of glutathion and cystein in an occasional litter. Further work along this line is in progress. In this connection it might be mentioned also that inconstant precocity has been observed in HCl extracts of other lymphoid glands (lymph gland, tonsils, and spleen).

The results of this study have been published from time to time and are summarized in Table I and Chart I. The accruing increase in the acceleration in growth as revealed in the weight curve, is most striking up to the seventh generation and in the processes of development up to the tenth generation. Our data would seem to indicate that the limit in the influence on both growth and development has been attained perhaps, and that little increase beyond the present limits can be expected in the future.

Thymus extract in the growth of teeth
Early eruption and marked increase in the rate of growth of the teeth have been observed and reported by Barrett¹

The effect of thymus extract on myelination Dr A. C. Buckley says

Studies concerning development of the central nervous system reveal rapid advancement of the rate of development, in terms of medullation, in successive generations in treated animals. A six-day tenth generation treated animal shows medullation in the spinal cord approximately equivalent to a twenty-four day normal animal. Medullated nerve fibers have been found in a twenty-four hour old animal, in amounts nearly equal to a three day normal control rat.

2 Thymectomy through successive generations For the past one to one and a half years, a series of rats has been thymectomized in successive generations. We are now in the fifth generation, with results as indicated in Chart II and Table II. From a study of these it is evident that as a result of thymectomy, there is definite retardation in the rate of growth, as indicated by the weight curves and the body length, and also a slight retardation in the rate of development, which does not, however, become evident until the fourth or fifth generation is reached.

3 Replacement therapy with thymus extract in thymectomized rats During the same period of time, replacement therapy has been carried out, using thymus extract.

CHART II—WEIGHT CURVES OF SUCCESSIVE GENERATIONS OF THYMECTOMIZED RATS AND THEIR CONTROLS

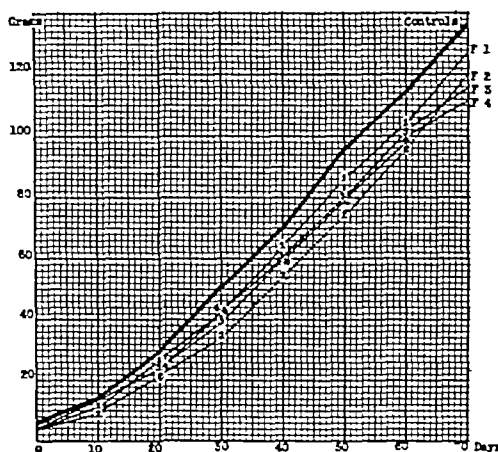


TABLE III—COMPARISON OF SOMATIC DEVELOPMENT IN SUCCESSIVE GENERATIONS OF THYMECTOMIZED THYMUS-TREATED RATS WITH CONTROLS

	Ears Open	Teeth Erupted	Hair Appeared	Eyes Open	Testes Descended	Vagina Open
Operative Controls	2-3 (2 9)	7-10 (8 5)	11-14 (12 5)	13-17 (15 2)	24-35 (30 2)	39-50 (44 3)
F ₁	2-4 (2 8)	7-10 (8 4)	12-14 (13 3)	9-17 (15 1)	21-38 (29 7)	40-48 (42 5)
F ₂	2-3 (2 8)	4-10 (7 7)	9-15 (12 9)	9-16 (14 3)	19-30 (26 4)	36-50 (43 4)
F ₃	1-3 (2 2)	4-7 (5 8)	7-12 (9 8)	9-12 (10 2)	18-24 (20 7)	26-36 (32 0)

TABLE IV—COMPARISON OF SOMATIC DEVELOPMENT IN SUCCESSIVE GENERATIONS OF THYMUS-IMPLANTED THYMECTOMIZED RATS WITH CONTROLS

	Ears Open	Teeth Erupted	Hair Appeared	Eyes Open	Testes Descended	Vagina Open
Operative Controls	2-3 (2 9)	7-10 (8 5)	11-14 (12 5)	13-17 (15 2)	24-35 (30 2)	39-50 (44 3)
F ₁	3 (3)	7-9 (8 1)	12-16 (13 2)	12-16 (15 1)	25-31 (28)	36-46 (42 2)
F ₂	1-3 (2 3)	3-9 (6)	8-13 (10 8)	7-14 (10 9)	20-28 (22 2)	33-42 (38 5)
F ₃	1-3 (2)	4-6 (5 2)	5-8 (7)	7-10 (8 2)	20-24 (22)	30-38 (34)
F ₄	2	5	7			

in the amounts employed in our thymus injection series of rats, (1 cc intraperitoneally daily) The young of each generation are thymectomized at approximately twenty days of age and mated, and the injection of the extract started When the litter cast has reached twenty days of age, pairs are again mated, thymectomized, and thereafter injected with the extract. In the fifth generation, which has now been reached, it is found that the retardation of growth caused by thymectomy, has been more than overcome by the amount of thymus extract used, since the resulting rats indicate a rate of growth and development, in excess of normal (Chart III and Table III)

4 Replacement therapy with homologous thymus implants in thymectomized rats

Thymus implants have been utilized in

CHART III—GROWTH CURVES OF SUCCESSIVE GENERATIONS OF THYMECTOMIZED RATS TREATED WITH THYMUS EXTRACT

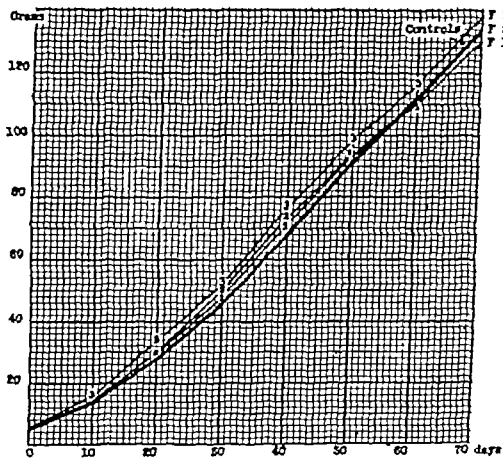
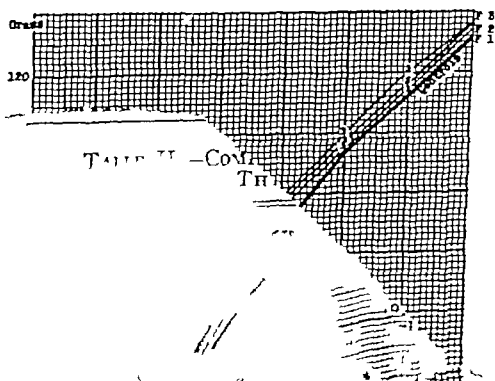


CHART IV—GROWTH CURVES OF SUCCESSIVE GENERATIONS OF THYMECTOMIZED RATS RECEIVING HOMOLOGOUS THYMUS IMPLANTS



thymectomized animals in an effort to see whether frequent implants at five days' intervals were capable of overcoming the retardation incident to thymectomy. In this series we have reached the fourth generation. The results of these studies are presented in Chart IV and Table IV, from which it can be seen that the thymus implants have entirely overcome the retardation incident to thymectomy. In fact the implants have resulted in an acceleration of growth and development, so that in the fourth generation of this series, the acceleration in the rate of growth and development is roughly comparable to that observed in the third generation of the thymus injected series.

5 The effects of thymus implants in normal rats * Comparable studies have been carried out in normal animals and implants have been made at five to seven days' intervals in young rats of each generation, starting at twenty-five days of age. Accruing acceleration in the rate of growth and development have been observed in this series, in the fourth generation, almost comparable to that resulting from injection of thymus extract in the third generation (Chart V and Table V)

6 The effects of radiation on the thymus gland in successive generations of rats In conjunction with Drs. Dorrance and Hughes of the Oncologic Hospital, x-ray treatment in moderate dosage has been administered to the thymus gland of newborn rats in two successive generations. In the first generation slight retardation was noted in growth, as reflected in the weight curve. In the second generation the retardation in growth is greater. In this experiment, however, it should be stated that the work is only in its earliest phases and that but few animals have been observed. It should be further noted that though every effort has been made to confine the radiation to the thymus gland itself, it is probable that other structures have also been affected by stray radiation.

7 The effects of pineal extract (Hanson) For the past two years a series of rats have been given daily intraperitoneal injections of pineal extract (Hanson), PB₂ containing 0.21% picric acid. In successive generations of rats this has produced accruing retardation in the rate of growth and accruing acceleration in the rate of development and differentiation. The nature and

* Preliminary study of some of the implants has shown vascularization of the reticular residual tissue with extreme paucity of lymphocytes. They bear very slight resemblance to adult thymic tissue, even after the lapse of weeks. No apparent difference has been noted in the implants of thymectomized animals or those of normals.

extent of these effects can be seen from Chart VI and Table VI. Various modifications of this method of extraction of pineal extract have been employed by Dr. Hanson but without yielding extracts that were so effective.

Realizing that criticism might be expressed over the presence of picric acid in this extract, an aqueous HCl extract has been employed now in our laboratory for approximately a year. We are now in the third generation under treatment, with results analogous in every respect to those obtained with PB₂.

Encouraged by the results of our studies, in which thymectomy in successive generations of rats yielded effects diametrically opposed to those resulting from thymus injections, pinealectomy has been undertaken in a series of animals. These experiments have been followed now for a year and a half, pinealectomy having been performed in rats at about eight days of age. Although we are now in the fourth generation, no constant or significant results have been obtained to date, except that the animals breed somewhat more slowly than in our other groups. Further work along this line is necessary, however, before any definite statement can be made concerning the effects of pinealectomy.

Discussion

From the foregoing it is evident that almost unbelievable changes in the rate of growth and development have been effected in the young by the various procedures discussed. Chart VII is a composite graph of the extreme (last generation thoroughly studied) results of the six experiments outlined, and shows at a glance the accruing acceleration of growth in rats, as indicated by weight, from frequent thymus injections or implants, and the retardation in growth resulting from thymectomy and the administration of pineal extract. Thus from five to thirty days the weight of the thymus treated strain is five times, and for the subsequent thirty days—three times that of the pineal treated group.

The various effects of these same six procedures on somatic development is shown in Table VII. The data cover the most marked effects observed to date and illustrate the accruing acceleration in the rate of development resulting from the administration of thymus extract, and the retardation incident to thymectomy or administration of pineal extract. Thus in the thymectomized rat the eyes may open as

late as nineteen days, whereas in the thymus-treated strain they have opened in forty-two hours.

A study of the Tables and Charts will reveal the accruing nature of the effects of each procedure. Amplification becomes more pronounced with passage through successive generations. It is important to note that results of treatment observed in the late litters of one pair of

CHART V—GROWTH CURVES OF SUCCESSIVE GENERATIONS OF RATS RECEIVING HOMOLOGOUS IMPLANTS OF THE THYMUS GLAND

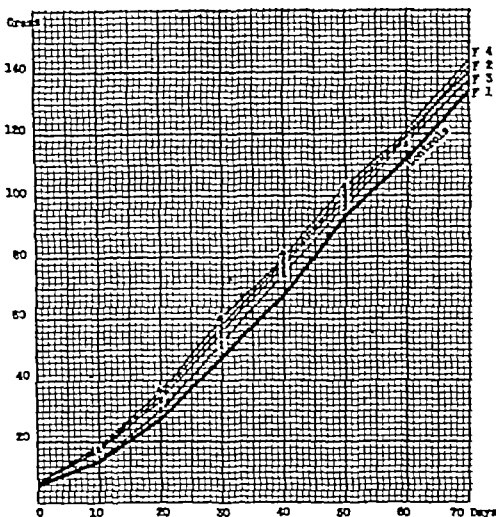
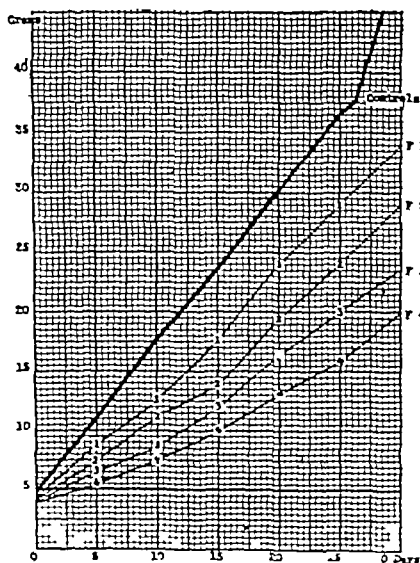


CHART VI—GROWTH CURVES OF SUCCESSIVE GENERATIONS OF PINEAL-TREATED RATS



parents is insignificant when compared with the results from this amount of treatment when distributed through several generations. This amplification of results in successive generations of animals treated is, so far as we know, something new in biology. The explanation is not evident as yet. It is of interest that treatment of both parents is essential to maximal effect. Treatment of the female alone yields results much less striking, while treatment of the male alone gives little or no effect.

Estrus has been demonstrated repeatedly, by vaginal smears, in the tenth generation, thymus-treated strain at nine to twelve days, in animals weighing less than thirty grams. The mature follicles likewise have been demonstrated grossly under the same conditions. Teeth have been observed and demonstrated in the first day of life in animals weighing under six grams. Likewise, in our pineal-treated strain, the teeth have erupted in two days and the eyes opened in five days, in animals weighing less than five grams.

CHART VII.—GROWTH EFFECTS IN THE STUDY OF THE THYMUS AND PINEAL GLANDS

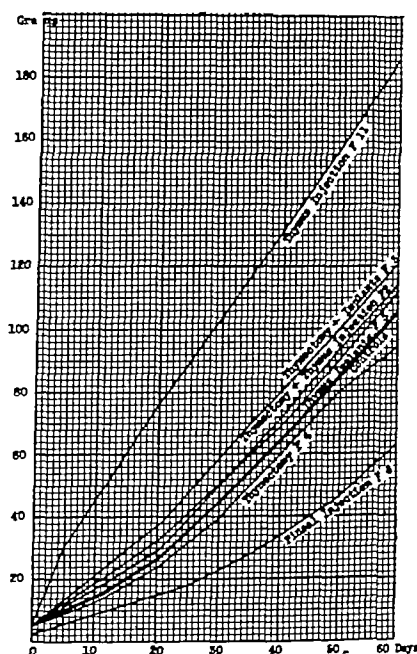


TABLE V.—COMPARISON OF SOMATIC DEVELOPMENT IN SUCCESSIVE GENERATIONS OF THYMUS-IMPLANT STRAIN OF RATS WITH DEVELOPMENT OF CONTROL ANIMALS

	Ears Open	Teeth Erupted	Hair Appeared	Eyes Opened	Testes Descended	Vagina Opened
Controls	2-3 (2 9)	7-10 (8 5)	11-14 (12 5)	13-17 (15 2)	24-35 (30 2)	39-50 (44 3)
F ₁	2-4 (2 9)	7-9 (8 1)	12-16 (13)	13-16 (14 7)	25-35 (28 2)	39-56 (44 6)
F ₂	2-3 (2 53)	6-9 (7 1)	11-13 (12 1)	9-16 (13 1)	19-30 (24 5)	37-52 (40 7)
F ₃	2-3 (2 2)	4-9 (6 8)	10-13 (11 3)	9-14 (11 8)	20-28 (24 6)	36-42 (39)
F ₄	1-3 (2 1)	4-7 (6 3)	9-13 (10 2)	9-12 (10 2)	20-28 (24 3)	32-42 (36)

TABLE VI.—PROGRESSIVE DEVELOPMENT UNDER PINEAL TREATMENT

	Ears Opened	Teeth Erupted	Fur Appeared	Eyes Opened	Testes Descended	Vagina Opened
Controls	2½-3½ (3)	8-10 (9 0)	16 (16)	14-17 (15 5)	31-40 (38)	55-72 (65)
F ₁	2-3 (3 3)	8-10 (9 0)	7-16 (13 0)	12-17 (14 9)	12-36 (22 0)	32-56 (45 0)
F ₂	2-3 (2 8)	7-11 (9 0)	6-17 (12 0)	12-16 (13 8)	6-26 (15 0)	30-39 (37 0)
F ₃	2-3 (2 3)	5-8 (6 9)	5-12 (9 0)	5-13 (9 8)	5-12 (10 0)	29-39 (32 0)
F ₄	1-3 (2 0)	3-5 (4 0)	4-8 (5 0)	4-8 (6 0)	4-9 (5 0)	23-26 (24 0)

TABLE VII.—THE SOMATIC DEVELOPMENT IN ADVANCED GENERATIONS OF TREATED ANIMALS

	Birth Weight	Ears Opened (days)	Incis Erupt (days)	Hair Appeared (days)	Eyes Opened (days)	Testes Descended (days)	Vagina Opened (days)	Estrum (days)
Controls	4 9	2½-3½	9	14-16	14-16	25-35	41-50	70-80
Thymus F ₁₁	6 0	Birth-1	Birth-1	1-2	42-48 hrs	4-6	6-9	9-18
Thymect. F ₄	4 6	3	10	14	16-19	30-33	44-62	62
Thymus Implants F ₃	5 1	2-3	4	6-8	9	20	36	
Thymect. & Implants F ₃	5 6	2	4	6	7-8	20	36	
Thymect. & Extract F ₄	5	3	6	8	12	24	40	
Pineal Extract	3 2	1-2	2-4	4-6	4-6	4-8	18-24	25-35
Pinealectomy	4 8	3	9-10	12-14	16	24	42-50	62-65

Histologic studies of the thymus glands of our thymus-injected strain of rats have been made in several generations, but have shown nothing startling beyond an enlarged succulent gland, overpopulated with lymphocytes, which have spread from the cortex into the medulla. At the same time there seems to be a paucity of Hassall's corpuscles, the whole gland resembling those encountered in extremely healthy, well-fed or overfed animals. Changes in the other organs of these animals have not been sufficiently striking to warrant comment, with the possible exception of the pituitary.

Numerous counts on a series of animals of the thymus-injected strain have been made by one of us (C) in the various age groups up to forty-five days, and these have been compared with counts made on a series of Institute control animals of similar ages. In all about eighty pituitaries have been counted, divided about equally between test and control animals. To date it appears that the adult pattern (cell distribution) of the thymus-injected animals is reached at an earlier period than in the control strain, although it should be admitted that our control animals do not conform to the normal counts reported by Wolff and Severinghouse, particularly in the acidophile count. The thymus-injected animals reach the

adult count of acidophiles of our control animals about ten days earlier than the controls.

While the effects of pineal injections have been, in some ways, even more interesting and striking than those following the administration of thymus extract, we have not been successful, as yet, in establishing a constant picture from either the ablation or implantation of the pineal gland. Success or failure in each instance may be dependent on quantitative factors since the extract employed represents in pineal tissue at least one hundred times the weight of the normal pineal gland of the rat. To date, therefore, our sole evidence in reference to the pineal gland concerns the effects, identical in nature, using either the picric acid containing extract or the aqueous HCl extract.

Conclusion

From these studies the conclusion seems inescapable that the functions of the thymus and probably also of the pineal gland concern the rate of growth and development of the young. The rate of growth is accelerated by the thymus and retarded by the pineal gland, while the rate of development is accelerated by both glands.

Reference

1 Barrett, M. T. *Dental Cosmos* November 1935

SLENDERIZING DRUG AND BLINDNESS

A news dispatch from California says that research workers of Stanford University Medical School are endeavoring to learn whether dinitrophenol, newly developed "anti-fat" drug, was responsible for the temporary blindness of twelve San Francisco Bay district women who have been stricken recently.

All of the women had taken the drug in an attempt to reduce, Dr. Loren Chandler, dean of the school, reported. Dr. Chandler and Dr. Walter W. Boardman, who reported

the cases to the *Journal of the American Medical Association*, said the blindness resulted from the formation of cataracts over the eyes, but it was not yet known whether the cataracts were caused by the drug or by malnutrition, unbalanced diet or other factors.

It was estimated 1,000,000 persons in the world, including about 100,000 American women, are using the new drug. Dr. Chandler warned that school authorities "advise against its use for the present."

District Branch Meetings

The Annual Meetings for 1936 have been arranged on the following schedule:

September 17, Thursday—Sixth District Branch—*Ithaca*.

September 22, Tuesday—Third District Branch—*Albany*.

September 24, Thursday—Seventh District Branch—*Willard*.

October 1, Thursday—Fifth District Branch—*Rome*.

October 2 and 3 Friday and Saturday—Fourth District Branch—*Plattsburgh*.

October 7, Wednesday—First District Branch—*Morrisania Hospital, New York City*.

October 15, Thursday—Eighth District Branch—*Buffalo*.

November 19, Thursday—Second District Branch—*Garden City*.

SURGERY IN ESSENTIAL HYPERTENSION

FREDERICK S WETHERELL, M D, *Syracuse*

Much excellent research has been done, both from the clinical and laboratory viewpoints, on the subject of essential hypertension. What follows is in the nature of comments on the application of surgical methods for relief of the condition and a necessarily curtailed discussion of the rationale.

Routine physical examination often discloses for the first time that an individual has a blood pressure above normal to a degree which makes the physician suspicious that he is dealing with a case of essential hypertension. Careful investigation may then bring out the facts that headaches of unusual severity have been noted, that at times palpitation and forceful beating of the heart occur on slight exertion or during emotional disturbance, and that usual activities cause an untoward degree of fatigue. These manifestations are paroxysmal in nature and the same is true of the rise in blood pressure during which the symptoms become manifest. The degree of severity of symptoms is as a rule in direct proportion to the relative rise in pressure.

Among the objective findings are

- 1 An abnormal rise in pressure following the "cold pressor" test devised by Keith and coworkers. With one hand in ice water the blood pressure is taken in the opposite arm. The rise in pressure in hypertensive disease is up to ten times as great as in the normal. This test is of outstanding value. It should be used as universally as the sphygmomanometer in questionable cases.

- 2 Spasm of the retinal vessels is also an early finding. It precedes retinal hemorrhages and the papilledema found in later stages or rapidly progressing cases.

- 3 An increase in the thickness of the small peripheral arteries can be demonstrated under the microscope.

Classification

The classification which divides essential hypertension into groups should be valuable to the surgeon as an aid in determining not alone the advisability of applying surgical measures for its relief,

but also in suggesting the type of operation to be applied.

Keith¹ and his coworkers have given us such a classification based on progression of the disease. Adson's² analysis of this grouping is such an excellent one that I take the liberty of quoting it verbatim. He says:

In grouping cases of hypertension according to the progress of the disease, Keith has called those with slow progression *benign* hypertension, those with moderate progression *early malignant* hypertension, and those with rapid progression *malignant* hypertension, since he hoped that these terms, benign, early malignant, and malignant, would indicate not only the rate of progress, but would also signify the character of the symptoms, for example, that "malignant" would not only signify that the disease was rapid in its progress, but that symptoms were also very marked. This classification is slightly misleading since the patients with benign hypertension in the latter stages will present as marked cardiovascular and renal symptoms as those suffering from malignant hypertension. However, in order to have a better understanding of the progressive nature of the disease, it is well to follow this classification until a better one has been developed. We, therefore, find that Keith's *benign* group, those in which the disease develops *slowly*, includes individuals in whom the disease originates between the ages of 40 and 55 years and continues for a period of 10 to 15 years before it develops to such an extent as to terminate life. In the earlier stages of benign hypertension, intermittent headaches and the presence of retinal arterial spasm are the only symptoms and findings present other than that of elevated blood pressure.

Keith's second group, *early malignant* hypertension, which develops moderately fast, begins during that interval between the eighteenth and fiftieth years of life and progresses for a period of 3 to 4 years before death results. Retinal arterial spasm is associated with hemorrhages and evidence of retinitis. The blood pressure is capable of rises of 200 millimeters of mercury systolic and 160 millimeters diastolic. Irreparable cardiac, coronary, and renal injuries

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New York City, April 29, 1936

present symptoms in later stages of the disease in this group

Keith's third group, *malignant hypertension*, which progresses *rapidly*, may occur during the same years as in the early malignant group. However, the life expectancy after the onset of symptoms in this group is much shorter and averages only 18 months. Examination of the fundus reveals arterial spasm, arterial sclerosis, retinitis, hemorrhage, and edema. The symptoms of cardiovascular and renal disease progress rapidly. The systolic blood pressure frequently rises to 250 to 300 millimeters of mercury and the diastolic to 160 millimeters of mercury.

This grouping, it seems to me, is of more significance to the surgeon than a mere aid to prognosis, as held by some. It may be a lead to the type of operation indicated in an individual case.

Types of Operation

At the present writing, four types of operation have been advocated as relief measures. They vary in technical difficulties as well as in the results obtained. Each of these methods has been described in detail²⁻⁶ and only sketches of the procedures are here presented.

Rhizotomy. Following laminectomy, the anterior spinal roots are sectioned in varying numbers, usually from the fifth thoracic to the upper lumbar region. Such ablation removes the sympathetic nerve supply to the splanchnic vessels and cuts the motor supply of the abdominal musculature. It is conceded to be a formidable task and would hardly be applicable in a "bad risk" case. That it causes vasodilatation of the splanchnic area and furnishes a vascular bed which can receive a large amount of blood during a paroxysm of high pressure is without question.

Sub-Diaphragmatic splanchnic nerve and celiac plexus resection plus partial resection of adrenals. Through a long kidney incision the sub-diaphragmatic area is approached. A portion of the twelfth rib is excised. The entire operation is extraperitoneal. The splanchnic nerve bundle is picked up at its point of emergence through the diaphragm and as much as possible is resected along with a lateral portion of the celiac plexus. Additional removal of the upper two lumbar ganglia adds to the area of splanchnic vessel dilatation. Following this, the perinephritic tissue is incised the superior pole of the kidney brought toward the surface and the suprarenal gland transfixed with a suture. One-half to three-fourths of the gland is

then removed. The operation is done in two stages. Carrying the lower end of the incision forward to the anterior superior spine aids in the exposure.

Supradiaphragmatic splanchnic nerve resection. A longitudinal incision is made over the vertebral ends of the last three or four ribs. A sub-periosteal resection of approximately two inches of the eleventh rib is made. The transverse process of the eleventh thoracic vertebra is removed. I have found it decidedly advantageous to remove the process flush with the body. Overhang adds to technical difficulties. The greater, lesser, and minor splanchnic nerves are resected. In addition, the four or five lower thoracic ganglia and rami may be removed. This adds little to the technical difficulties and may add to the beneficial results. The last statement, a personal observation, is made in view of the definite right abdominal wall relaxation which followed a resection of the fifth to the eleventh thoracic ganglia and rami on the right side as a relief measure for visceral pain.

Resection of adrenal tissue. This operation needs only to be mentioned. The technique is well-known and is the same as applied in the removal of adrenal tumors.

Comment

The disease varies greatly in its manifestations in individuals. In one patient it may be rapidly fatal, in another run an attenuated course. It may be extremely disabling in one case, yet with objective findings of like nature, another may carry on an almost normal existence. Such findings indicate that we are dealing with great variations in the sensitiveness of sympathetic nervous systems. This lability undoubtedly extends from the frontal area, through the hypothalamic centers, to the remotest endings in smooth muscle fibers.

Medical treatment had been the only recourse for alleviation of the disease up to the time that sympathetic nerve surgery suggested the possibility of creating conditions which would lessen the severity of the paroxysmal rises in blood pressure.

The former must of necessity spend the major part of its activity in control of the central factor. Drugs, except mild sedatives, have proven valueless. Surgery, at least today, can only attack the distal factors.

Basically, it is diminution in the size of the smaller arteries which determines a rise in blood pressure. In essential

hypertension, a spasm and eventually a thickening of the wall of the arterioles determines the rise. This result is due to vasoconstrictor activity of the sympathetic nerve fibers. Vasoconstriction is a normal function and only becomes abnormal in the presence of an unstable, hypersensitive, sympathetic nervous system, one which responds to emotional or other stimuli in a degree not possible in the normal. This can be proven by a comparison of blood pressure readings of normal individuals who have been subjected to excitements of the same nature as those received by patients with varying degrees of hypertensive disease. Emotion may increase the systolic pressure as much as sixty millimeters Hg and the diastolic twenty-five millimeters Hg, whereas the normal does not show a rise of more than twenty millimeters systolic and from five to eight millimeters diastolic under like conditions.

Into this picture must be fitted the activity of the adrenal glands. The sympathetico-adrenal mechanism is a most important factor in the coordinated physiological reactions which maintain most of the steady states in the body (homeostasis).⁷ That an increase in secretion has a more marked effect in hypersensitive sympathetic states than in the normal is well-known. The classical reaction to epinephrin injections in hyperthyroidism is an example. The fact that the sympathetico-adrenal mechanism has definite work to do in controlling the blood sugar, clotting time, and many other bodily activities must be considered when adrenal surgery is contemplated, if only to make use of this knowledge in pre- and post-operative investigations to determine variations in these functions, and to aid in estimating the value of partial adrenalectomy. That no apparent harm follows resection of portions of the adrenal glands is suggested by the reports of those who have attempted to control hypertension by such operations. That *prolonged* benefit results has not been proven.

General Discussion of Surgical Procedures

Splanchnic nerve ablation, either alone or with the addition of partial removal of adrenal medulla, is proposed as means

of furnishing the body with a large area free from vasoconstrictor activity (splanchnic area) and a diminution of adrenal secretion.

Because of the comparative simplicity of the supradiaphragmatic operation it is likely to gain favor over the other methods. This does not indicate that it will be the one to be preferred in all cases. Peet⁸ has reported a large number of cases operated in this manner and the results obtained indicate that it has a distinct value. It is the only large series reported and the fact that fifteen per cent of his cases have an apparent cure, thirty-seven per cent are symptom free, forty-eight per cent report some relief in symptoms although the blood pressure remains the same, merits consideration when surgery is contemplated.

My feeling is that this operation will be especially indicated in older patients in the benign, or early malignant group, who are unable to obtain relief by medical means, and in whom the more extensive operations might jeopardize life unduly. The following is an example.

Mrs I J, sixty-one year old woman whose livelihood depended on selling goods from house to house in a farm district, found that for five years she had increasing difficulty in carrying on her work. She had dizzy spells, a "heart consciousness," weakness, severe occipital headaches, insomnia, and depressed feelings. Her physician, Dr G R Lewis, after careful examination and prolonged medical treatment felt that the element of essential hypertension in the case might be relieved by surgical intervention. The patient's environment, and other conditions, precluded the chance for betterment by medical treatment. Her age made me hesitate about operating, yet after a consideration of all the elements involved it was decided to do a supradiaphragmatic resection plus removal of the 8th to 12th thoracic ganglia and ram. In a basal state her blood pressure readings were 1 35-190/94, 1 40-188/94, 1 45-184/90, 1 50-188/96, 1 55-182/88, 2 00-186/90. The cold test gave readings, after two minutes 2 07-236/114, 2 09-210/100, 2 11-200/96, 2 15-196/96, 2 30-190/94. Her emotional high point was 230/115. This was the usual reading in the office on arrival.

Eye findings indicated a very early retinal sclerosis, definite irregularities in caliber, discs normal. Family history one of hypertensive disease, both parents and one sister

having died of apoplexy between ages of sixty-two and sixty-four. One sister died at age of fourteen of "brain fever."

After a one stage bilateral operation the systolic pressure ranged between 160/90 and 190/100 while in the hospital. She was out of bed on the seventh day and left the hospital on the tenth postoperative day. Four months later the patient resumed her usual work. She was free of the very troublesome headache and she felt better in every way. Her blood pressure after a twenty mile trip to the city, and without rest was 180/90.

Of course, it is too early to draw conclusions from this case but it points to possibilities. The risk entailed in applying any of the other procedures would have been too great.

There is very little postoperative discomfort following the operation and the patients can as a rule be out of bed on the tenth day. Experience in thoracic surgery is of no little aid in the handling of the pleura in these cases. Puncture must be avoided. If it should occur, as happened to me on one occasion during the performance of a cervicodorsal sympathectomy, a well-soaked saline sponge prevents air suction until the wound can be closed tightly. This is the complication which has decided some surgeons against employing the supradiaphragmatic approach.

Certain excision of the three splanchnic nerves is assured by the infradiaphragmatic approach. The possibility which presents for removal of a portion of the celiac plexus adds the effect of partial adrenal denervation. In the light of Crile's observations⁸ the value of this effect is in doubt. Removal of a portion of the adrenal gland may be accomplished at the time and may be of distinct value as an adjunct to the splanchnic dilatation resulting from the first step in the operation. At least, in the light of present knowledge, it leaves nothing undone. It is more extensive than adrenalectomy alone, but it leaves the splanchnic vessels without a vasoconstrictor influence, which is desirable. A large vascular bed capable of being dilated during rises in blood pressure results. Theoretically, this should relieve the other vessels of the body from the stress which accompanies the great swings of pressure. It seems reasonable to suggest that the inferior approach should be utilized in cases in which the progress is more rapid and the

patient in condition to withstand the more extensive work entailed, in other words, the early malignant group. The mortality rate of the infra- and supradiaphragmatic operations should be about the same in a given case but it seems that a greater number of patients could withstand the latter procedure. In both instances the mortality rate is low enough to warrant applying them as relief measures.

Because of the uncertainty of what will happen to the remnant of adrenal tissue remaining after resection without splanchnic nerve removal, it seems reasonable that until more is known regarding this question, the operation of nerve ablation should always accompany removal of the adrenal tissue.

In the malignant group, rapidly progressing to death, the risk of the operative procedure employed may fairly be considered as of secondary importance to the possibility of gaining relief and prolongation of life. Further *clinical research* will determine which of the measures will be of greatest value. Rhizotomy, perhaps with addition, at a later time, of adrenal resection, may prove to be the method of choice.

Conclusions

The author realizes that some internists feel that this problem is purely a medical one and that in the treatment of essential hypertension surgery is not yet to be considered of value. As to the latter feeling, the increasing number of reports of encouraging results following operation indicates that surgery will be of great aid as an adjunctive measure. No claim has been made to specificity of either sympathetic nerve resection or adrenal surgery. No well-informed surgeon will make such claims.

Medical treatment properly carried out will undoubtedly be sufficient in a large number of cases, yet no less an advocate of this method than White⁹ points to the necessity for the most painstaking and meticulous attention to detail, and the importance of having a patient intelligent enough to follow directions. Like the individual with peptic ulcer who cannot follow a regime and must come to surgery, so too there are many patients with essential hypertension whose educational endowments, or inherited common sense, or unwillingness to curtail normal activi-

hypertension, a spasm and eventually a thickening of the wall of the arterioles determines the rise. This result is due to vasoconstrictor activity of the sympathetic nerve fibers. Vasoconstriction is a normal function and only becomes abnormal in the presence of an unstable, hypersensitive, sympathetic nervous system, one which responds to emotional or other stimuli in a degree not possible in the normal. This can be proven by a comparison of blood pressure readings of normal individuals who have been subjected to excitements of the same nature as those received by patients with varying degrees of hypertensive disease. Emotion may increase the systolic pressure as much as sixty millimeters Hg and the diastolic twenty-five millimeters Hg, whereas the normal does not show a rise of more than twenty millimeters systolic and from five to eight millimeters diastolic under like conditions.

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Eye findings indicated a very early retinal sclerosis, definite irregularities in caliber, discs normal. Family history one of hypertensive disease, both parents and one sister

pathetic nervous system is of course that essential hypertension is due to overactivity of sympathetic stimulation. The reason for the removal of the splanchnics and the sympathetics is based on the supposition that there is an increased constriction of the arterioles in the splanchnic area from effector impulses over these routes. Recent careful investigations raise a grave doubt as to the validity of this assumption. It has been shown that the peripheral vasomotor reactions in hypertensive individuals are in no way different in character nor intensity from those of individuals with normal vessels. If the hypertension were due to increased vascular resistance in the splanchnic area the blood flow must necessarily be increased through the other vessels of the body, their caliber remaining the same. This is in accord with Poiseuille's law that the blood flow in any cross section of the vascular bed per unit of time is directly proportional to the pressure and inversely proportional to the resistance. Prinzmetal and Wilson further demonstrated that the vasomotor reactions in the hypertensive were of the same order as in the normal individual. This shows that hypertension is due to vascular hypertonus throughout the systemic circulation. There is, therefore, no valid

reason for any of the operations on the sympathetic system. The hypertonus is due to some factor as yet unknown. It does not appear to be a circulating pressor substance, although there may be such a substance not detectable by our present methods.

Essential hypertension from the medical standpoint is not in itself a condition which calls for drastic action. Many instances have been recorded with a course of over twenty years. At the present time the physician cannot predict in any given case when kidney damage will become evident. He can make a surmise that he is dealing with malignant hypertension when the individual is young and the progress is rapid. Malignant hypertension is a rapidly fatal malady, the average being one to two years from its onset. In these cases the physician is helpless. It seems that a surgical attack on such a group is justifiable if it holds any promise whatsoever. It is my feeling that surgery should be confined to this group and not used indiscriminately in all cases of essential hypertension. We should keep careful records and publish *late* results. I do not think that we have found the answer to essential hypertension and I think that it lies in some other direction than that which we are now following.

NEW FORM OF BIRTH CERTIFICATE

A new form of birth certificate, which differs in several respects from the one formerly used, has been placed in the hands of all local registrars of vital statistics of the State, outside of New York City.

The most important change was necessitated by the enactment into law of the Holley bill which provides that "there shall be no specific statement on the birth certificate as to whether the child is born in wedlock or out of wedlock, or as to the marital name or status of the mother." In accordance with this requirement, the item relating to legitimacy has, therefore, been omitted from the birth certificate. The law is to take effect September 1, 1936 and on and after that date it will be illegal for any local registrar to accept a birth certificate of the old type or a certificate of the new type which might

contain a specific notation regarding legitimacy. Thus, if a physician should mark a birth certificate "O W" (Out of Wedlock), the local registrar would be obliged to return it and request that a new form be filed without any identifying inscription.

The Holley bill reflects the views of the Governor's Commission which, under the chairmanship of Mr. Homer Folks, prepared and submitted to the Legislature last spring a comprehensive and forward-looking report on the important problem of illegitimacy.

Among the minor changes in the form of birth certificate of special statistical importance is the elaboration of the items relating to the residence of the mother, which will make it possible to allocate accurately all births recorded in the upstate territory. *Health News*, August 31.

MEDICAL RADIO BROADCASTS

The Medical Information Bureau of the New York Academy of Medicine announces the following broadcasts from Station WABC and the Columbia Broadcasting System network.

Thursday, Sept. 17, 1:30 P.M.—Speaker, Dr.

Albert H. Aldridge, Attending Surgeon, Womens Hospital. Subject, "Intelligent Motherhood."

Thursday, Sept. 24, 1:30 P.M.—Speaker, Dr. William J. Hoffman, Director of Tumor Clinic, Queens General Hospital, New York City. Subject, "Cancer Facts and Fallacies."

ties, precludes attainment of medical control. There are those of us who would rather end in a "blaze of glory" than to linger on in semi-invalidism for the sake of staying alive. It is so often impossible too, to change environmental conditions which may be a major factor in defeating the physician's efforts at control.

These, then, are points which must be considered, and which may decide the issue between medicine and surgery in an individual case.

The internist is the one who, after a thorough study of his case, must decide what is to be done. The surgeon must be equipped to survey intelligently the find-

ings of the internist, and then to apply the operation which experience indicates will result in the greatest benefit.

Least operative procedures fall into disrepute, it is incumbent on the surgeon to make a selection of cases with a view to obtaining an increasingly higher percentage of beneficial results. To achieve that end, the capacity for an intelligent review of the findings in each case is self-evident. Only by this manner of approach, it seems, will progress be made and surgical methods be given their proper relative value in the treatment of essential hypertension.

MEDICAL ARTS BLDG

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Discussion

DR. JOHN J MORTON, JR, Rochester—Dr Wetherell has given a very able presentation of the surgical attack on the problem of essential hypertension. You will note from his review that many different operations have been devised for handling this condition.

The most difficult operation from a technical standpoint is the long laminectomy with division of the anterior roots from dorsal VI to lumbar II. This is a severe operation even in the hands of the master surgeons who have advocated it. It has another disadvantage in that it causes a motor paralysis of the lower thoracic and upper abdominal muscles.

The simplest of the procedures is the extrapleural resection of the splanchnic nerves. This involves removal of a section of the XIth rib on each side. It is an operation carried out in a deep hole with artificially lighted retractors. The dangers are in pneumothorax and in bleeding from the azygas veins. It is not possible to be sure of the upper two lumbar nerve connections in this operation.

The subdiaphragmatic operation for splanchnic resection involves a wide dissection with more damage to the anatomical structures in the approach. It is possible to combine partial resections of the adrenal glands and division of the upper two lumbar nerve connections.

The operations for denervation or partial resection of the adrenal glands can be done by either the lateral subperitoneal or pos-

terior routes, or transperitoneally.

Denervation of the kidneys has been proved to be valueless.

The immediate results of most of these operations are quite striking. The surgeon can point with pride to lowered systolic and diastolic pressures, headaches are relieved, and the patients feel much better than they have for some time. It is said also that the changes in the eye grounds show marked improvement. As a rule, as time goes on however, the blood pressures slowly regain their previous level.

A perusal of the reported cases leaves a peculiar impression on the student of this problem. Crile, DeCoursey, Leriche, and Meillere, have all claimed striking results from operations on the adrenal gland alone. Adson and Craig who began with laminectomy and anterior root division, changed over to subdiaphragmatic splanchnic resection with partial adrenalectomy. They offered as explanation for Heuer's good results in anterior root division, that his cases were more carefully selected. Peet is apparently quite satisfied with his extrapleural splanchnic operation. Crile, who previously reported good results in early cases by adrenal denervation, has now changed to splanchnic resection. In other words, it appears that there is no unanimous approval of any of the operations. Some of the surgeons also seem to be looking for something to add to their previous operations as if they were not quite content.

The premise for the attack on the sym-

the short radio waves became concentrated in the drops of sweat which accumulated on the skin surface, producing arcing and burning. With the collaboration of Mr. Charles F. Kettering and Mr. Edwin C. Sittler, of the Research Laboratories of the General Motors Corporation, a simple and efficient air-conditioned cabinet was devised.* We were convinced, however, that the high cost and complexity of the combined radiotherm and air-conditioned cabinet militated against its usefulness.

After two years of constant experimentation with various modifications of the apparatus, an accidental observation caused us greatly to alter the method of producing and maintaining artificial fever. While subjecting a child with congenital syphilis to artificial fever therapy by the combined radiotherm and air-conditioned cabinet method, the nurse-technician failed to turn on the switches controlling the output of the high frequency currents. The rectal temperature reached the desired level of 106°F (41.1°C) in the usual time (50 minutes). It was then discovered that the high frequency currents had not been utilized for fever induction. By adjusting the air temperature-humidity factors in the air-conditioned cabinet the temperature was maintained at this level for the usual five-hour period.

This fortunate occurrence led us to develop a much simpler, safer, less costly, and more easily controllable air-conditioned apparatus (Kettering hypertherm) for fever production and maintenance (Fig. 1). High frequency currents are no longer employed. Deep tissue temperature studies made with thermocouples revealed no essential difference in deep heating effect when fever was produced by either high frequency currents (diathermy or radiothermy) or by conditioned air alone.

In its present state the Kettering* hyper-

therm consists of an insulated cabinet in which the nude patient lies, with his head extending outside the cabinet. Sponge-rubber insulation is utilized in the neck region to permit the patient to shift his position. The patient lies on an air mattress, supported by a boxlike bed, which is rolled in and out at will. In the rear of the cabinet is a small insulated fire-proof compartment in which the air-conditioning apparatus is housed. The dry-bulb air temperature is controlled by a thermostat. The percentage of relative humidity is controlled by a humidistat. The air velocity within the cabinet is controlled by blowers of fixed speed. The average set of air conditions to which the patient's body is subjected during fever induction is as follows: dry-bulb air temperature of from 130 to 150°F (54 - 65°C), relative humidity of from thirty-five to fifty per cent, and air velocity of 425 cubic feet per minute. The elevation of the rectal temperature to 105°F (40.6°C) is ordinarily accomplished in from forty minutes to one hour. During fever maintenance the dry-bulb temperature and air velocity are reduced. The air is constantly conditioned by continuous passage through the air-conditioning compartment. The safety and comfort of the patient are greatly enhanced by the accurate control of the relative humidity.

The mechanism of fever induction with the Kettering hypertherm depends primarily on heat transfer by conduction from the circulating heated air. This factor, combined with prevention of the normal rate of heat loss from the body by radiation and evaporation, is responsible for the elevation of the body temperature and its maintenance at any desired level.

The simplification of the apparatus and the removal of hazards inherent in certain other physical modalities, have converted this form of therapy from one requiring hospitalization to one in which the patient is usually able to return to his work on the day following treatment.

Early in the course of this investigation we discovered that the sense of exhaustion commonly experienced by many of our patients could be largely overcome by supplying large quantities of chloride-containing fluids. Most patients lost between two and five liters of sweat during

* Fifty-five of these units have been lent to twenty medical research centers, strictly for investigative purposes. The physicians and nurses charged with this undertaking received special training in the Department of Fever Therapy Research at the Miami Valley Hospital before the apparatus was released. A simpler, smaller and less costly apparatus is now being developed. It is probable that this apparatus will ultimately be available on a loan-lease basis to certain qualified institutions.

ARTIFICIAL FEVER THERAPY OF SYPHILIS AND GONOCOCCIC INFECTIONS

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The monumental researches of the Viennese physician, Julius Wagner-Jauregg,¹ announced in 1918, provided the stimulus which has led to the present remarkable interest in artificial fever therapy. For centuries, most physicians regarded fever as an alarming symptom of disease. After Virchow had ascribed various degenerative tissue changes to the effect of fever, the use of antipyretic drugs became common practice. Since Wagner-Jauregg's demonstration that artificial fever, induced by malaria inoculation, was frequently capable of overcoming the ordinarily disastrous effects of syphilis of the central nervous system, it has become more and more apparent that fever is one of the most important mechanisms of defense against infection. There is a growing body of evidence which indicates that fever exerts an adverse influence upon the growth of certain bacteria, diminishes the potency of toxins, favors phagocytosis, and stimulates the development of immune bodies.²

Wagner-Jauregg's success in the malaria therapy of dementia paralytica was soon confirmed by investigators in many parts of the world. The inherent dangers of engrafting one serious disease upon another as a therapeutic measure naturally led to a diligent search for a less hazardous method for producing a similar effect. Comparable results were obtained by other workers following inoculations with the organisms of rat-bite fever and relapsing fever. Repeated injections of vaccines prepared from typhoid or paratyphoid organisms or from *hemophilus ducreyi*, heteroproteins such as milk or peptone, and chemical substances such as sulphur, have yielded comparable

results in those cases in which sustained high fever was induced. It became more and more apparent that simple fever production was the important, if not the only, factor in the production of similar therapeutic results with such a wide variety of fever producing agencies. It was natural that these observations should stimulate a search for physical methods for artificial fever production.

Schamberg and Rule (1926), and Mehrtens and Pouppirt (1929) reintroduced the prolonged hot bath for thermotherapy. Rosanoff (1928) reintroduced the outmoded hot air method. Neymann and Osborne (1929), King and Cocke (1930), and Whitney (1930) introduced the use of high frequency electric currents (diathermy and radiothermy).

Investigations in the artificial production of fever by physical methods were begun at the Miami Valley Hospital in 1931. Several months of experimentation with hot baths, hot air, electric blankets, and diathermy convinced us that these physical modalities possessed inherent hazards, even though comparable clinical results could be obtained with any of these methods.

Experiments were then begun with an ultrahigh frequency oscillator, known as the radiotherm, developed by Whitney and his associates³ in the Research Laboratories of the General Electric Company. The apparatus was essentially a 1-kilowatt radio transmitter in which the condenser discharges were concentrated between two large metal plates instead of being directed from an aerial. The apparatus produced a high frequency field of approximately ten million cycles per second (30 meter waves) between the condenser plates. Early in the course of this investigation it became apparent that the comfort of the patient would be greatly enhanced by utilizing some form of insulated air-conditioned cabinet. This measure was necessitated by the fact that

With the collaboration of Charles F. Kettering, Sc.D., Edwin C. Sittler, B.S. in Engineering, Fred K. Kislig, M.D. (deceased), H. Worley Kendall, M.D., L. G. Kauffman, M.D., Arthur M. Culler, M.D., and Jerome Hartman, M.D.

Forty-five patients were treated for gonococcal arthritis, twenty-eight patients received treatment for gonococcal infection other than gonococcal arthritis

I Treatment of Syphilis

Many observers⁶ have found fever therapy combined with or followed by chemotherapy to be more effective than fever therapy alone in the treatment of neurosyphilis. On this basis we have combined chemotherapy, usually in the form of bismuth arspenamine sulphate (Bismarsen), with the fever treatments. In some patients neoarsphenamine (30 injections, each containing 0.3 gm.) and bismuth (30 injections, each containing 0.2 gm. of metallic bismuth) therapy was substituted. One advantage of the induction of artificial fever by physical methods is that the antisyphilitic drug may be given during the course of fever treatments. It is our practice to inject the antisyphilitic drug half an hour before the fever treatment is begun, on the basis that the general vasodilatation which occurs during sustained high fever may permit greater diffusion of the chemical substances. Bratz⁷ believes that fever produced by malaria increases the permeability of the small vessels of the brain and permits protective substances to reach the diseased brain tissues. After the ten sessions of fever therapy plus chemotherapy, twenty injections of the antisyphilitic chemical agents are given, at weekly intervals.

We have regarded a minimum course of artificial fever therapy for patients with syphilis to consist of fifty hours of sustained fever between 105 and 106° F (40.6-41.1 C). This more or less arbitrary choice is based on the observation that the highest remission rate following malaria therapy occurred in patients who had experienced at least fifty hours of fever above 102° F (39 C). The treatments are usually given in ten weekly sessions, each of five or more hours' duration. Many patients experience the most marked improvement after five or six treatments, a few require more than ten.

All patients are subjected to a thorough diagnostic survey to determine eligibility for fever therapy. Special studies are made of cardiac, vascular, and renal functions including electrocardiographic stud-

ies, basal blood pressure determinations and blood chemical analyses. Blood and spinal fluid serologic reactions, spinal fluid cell count, protein and sugar content, and colloidal gold reactions are determined before treatment is begun at the end of the combined fever-chemotherapy regimen, and at intervals of six months thereafter. As an additional control measure duplicate blood and spinal fluid specimens from these patients were submitted to Kahn in the laboratories of the University of Michigan Hospital for repetition of the serologic examinations. The Kahn standard diagnostic, presumptive and quantitative procedures* were carried out in those laboratories without any knowledge of the clinical condition of the patients, and reported to us.⁸ Old age (above 60 years), cardiac or renal insufficiency, advanced cardiovascular syphilis, aortic aneurysm, and the demented form of advanced dementia paralytica are regarded as contraindications. Patients between forty-five and sixty years of age are treated with great caution. One or more mild treatments are usually given such individuals as a test of cardiac function. Occasionally, treatments are spaced two weeks apart.

Early Syphilis

For centuries, laymen have known that sustained heat exerts a favorable influence on the cutaneous lesions of syphilis. The popularity of balneotherapy in many parts of the world has persisted since the ancient Greek priest-physicians first converted their thermal springs into baths. While emphasis has been placed on the mineral content of the waters, it now appears that the virtue of balneotherapy lies in its ability to produce local or general fever. The advent of scientific methods for the controlled production of fever provides a rational explanation for some of the results attained with the purely empirical use of these older methods.

A mass of experimental data is rapidly accumulating which provides strong evidence of the unfavorable influence of high body temperature on *Spirochete pallida*.

* The Kahn quantitative procedure was found to provide a reliable and sensitive index of therapeutic response.

a five-hour treatment at 106° F (41.1 C). The blood chloride values exhibited an average decline of forty mg per cent at the end of the febrile period in approximately eighty per cent of the patients. In five instances the fall exceeded one hundred mg per cent. Some patients exhibited such evidences of hypochloremia as nausea, vomiting, abdominal cramps, muscular twitchings or tetany. Chemical analysis of the sweat revealed an average

to 1,000 c.c. of a solution containing ten per cent of dextrose and one per cent of sodium chloride is slowly injected intravenously, without interruption of the treatment.

Treatment

During the past five years we have subjected 431 patients to 3,204 artificial fever treatments (approximately 17,000 hours of sustained fever). With the exception

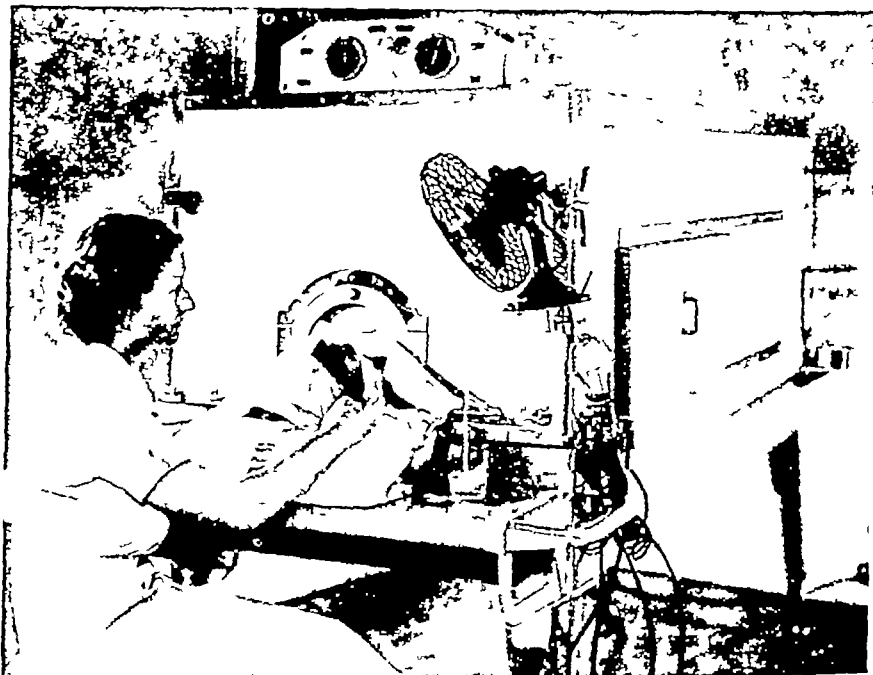


Fig 1 The Kettering Hyperthermia

sodium chloride content of 650 mg per cent. Thus, from twenty to twenty-six grams of sodium chloride were being withdrawn from the blood and tissues during each treatment. Repeated gastric analyses revealed that the free hydrochloric acid completely disappeared during the first thirty to ninety minutes. These findings suggested the advisability of supplying chlorides during and immediately after each treatment. It was immediately apparent that the ingestion of two to four liters of 0.6 per cent sodium chloride solution (iced) largely abolished the symptoms of hypochloremia.

If nausea and vomiting persist, or if the patient is unable to take the required amount of chlorides by mouth, from 500

of occasional mild skin burns which occurred particularly at the beginning of this undertaking, no person has been injured by the treatments. One hundred and ninety-three patients, who have been under observation for six months to four and one-half years, have been treated for syphilis or gonococcal infection. Those patients who did not cooperate during the course of treatments or during the post-treatment progress studies, and all patients who have been under observation for less than six months, are excluded from consideration. There were thirty-one patients who received treatment for primary and early secondary syphilis, eighty-nine for neurosyphilis, ocular syphilis or resistant seropositive syphilis.

the end of fever treatment and remoculation, did not effect the results. Hence the fever treatment was effective at any stage of experimental syphilis in rabbits. The same authors investigated the thermal death time gradient of *Spirochete pallida* in testicular extracts *in vitro*. Five hours of temperature at 102.2° F (39 C), three hours at 104° F (40 C), two hours at 105.8° F (41 C), and one hour at 106.7° F (41.5 C) were required to render infective material innocuous to other rabbits.

Levaditi and de Rothschild¹⁷ carried out somewhat similar experiments in which thermocouples were used to determine local temperature, with less constant results. In many of the rabbits rapid healing of the primary lesions, disappearance of spirochetes, sterilization of lymph glands, and negative serologic reactions occurred. Levaditi regards artificial fever as an effective factor in stimulating the defense mechanism. Kolmer and Rule¹⁸ demonstrated that the testicular lesions were prevented and the inguinal lymph glands became sterile if rabbits inoculated intratesticularly with *Spirochete pallida* four days previously were immersed in water at 113° F (45 C) for twenty minutes daily for fifteen days. If, however, the testicular lesions were kept out of the heated water, active syphilitic lesions developed. These authors¹⁹ also found that fever of from two to five degrees F (11–28 C) which lasted several hours and which was induced in the rabbit by intravenous injections of increasing amounts of typhoid-paratyphoid vaccine or Coley's fluid showed much less effect on the course of acute testicular syphilis than did fever induced by hot baths.

We have confirmed the observations of Carpenter, Boak, and Warren by a somewhat different experiment. Six male rabbits were inoculated intratesticularly with fresh testicular extract containing the Nichols strain of *Spirochete pallida*. Only rabbits with negative Kahn and Kolmer serologic reactions were selected. Chancres or syphilomas developed in both testes of all the animals within four to six weeks. Aspiration revealed the presence of spirochetes in all. The serologic reactions of all were strongly positive at the end of eight weeks. Hemicastration

of each rabbit was then done. The testicular emulsion derived from the extirpated testis of each of these six rabbits was then injected into the testes of each of a new series of six seronegative normal rabbits, all developed chancres and positive serologic reactions in the usual time. Immediately after hemicastration, the syphilitic rabbits were subjected individually to sustained rectal temperature of from 107.1 to 108.1° F (41.8–42.4 C), average 107.6° F (42 C), for six hours, thirty-meter waves of a high frequency oscillator being used. The remaining testis was then removed from each rabbit four days after the fever treatment. Injection of testicular suspensions from each heated rabbit was made into the testes of each of a new series of seronegative normal rabbits, none developed evidence of syphilis, the serologic reactions of all remained negative.

It is quite conceivable that the same uniformity in results might not obtain following the application of fever therapy to human subjects. Syphilis in rabbits apparently pursues a somewhat milder course, generalized lesions and central nervous system involvement are comparatively rare. Nevertheless, these experimental studies provide incontrovertible evidence of the spirochetocidal effect of sustained high body temperature. Many observers are convinced that fever therapy is capable of producing a distinctly favorable influence on the progress of early syphilis, particularly when fever therapy is combined with orthodox chemotherapy. Kyrle²⁰ gave 232 seropositive patients with early syphilis (under two years duration) a course of arsphenamine (from 4 to 6 gm), followed by malaria therapy (ten chills), followed in turn by another course of arsphenamine therapy. The results were incomparably better than by any other method employed. Of the 232 seropositive patients with early syphilis, the blood serologic reactions were favorably influenced in 230 (99.1 per cent) after a single combined arsphenamine-malaria-arsphenamine course. Fifty-four of these patients had exhibited positive spinal fluid reactions. All were reversed to negative and remained negative. When Matuschka and Rosner²¹ reported on the work of Kyrle after his untimely death, not one of these patients had relapsed,

Many observers have reported their inability to find spirochetes in the brain tissue of patients who have died following malaria therapy.

In 1919 Weichbrodt and Jahnel⁹ placed rabbits with scrotal chancres in a thermostatically controlled incubator with the air temperature at 105.8° F (41 C). The temperature elevation in the rabbits induced by this procedure ranged from 104 to 107.6° F (40–42 C). The rabbits were subjected to this treatment for thirty minutes once or twice daily for from three to five weeks. After the second day the spirochetes gradually lost their motility, declined in number, and disappeared. The chancres healed much more rapidly than in untreated rabbits.

Schamberg and Rule¹⁰ in 1926 demonstrated that eleven hot baths on consecutive days, producing an average rise in the rabbits' temperature of four degrees F (2.2 C), when begun four days after the intratesticular inoculation of *Spirochete pallida*, would prevent the development of syphilitic lesions. They found that spirochetes heated on a water bath to 106° F (41.1 C) for six hours lost their motility and began to disintegrate. Their next experiment¹¹ showed that well-developed chancres of the scrotum of the rabbit disappeared after fifteen daily hot baths, each of fifteen minutes' duration. The average elevation of the rabbits' temperature was from 5.2 to 5.8 degrees F (2.9–3.2 C). In eight days the spirochetes had disappeared. The testicles were entirely normal in seventeen days. To determine whether the infection was completely extinguished, the popliteal and inguinal lymph glands were removed on the seventy-sixth day and injected into the testes of another rabbit. Eighty-seven days after the inoculation there was no evidence of infection. These experiments demonstrated that syphilis in the rabbit can be prevented and that primary syphilis in the rabbit can be cured by hot baths. In this connection, Schamberg states

The interesting query arises whether extremely hot baths might be effective as a prophylactic measure after exposure.

Schamberg and Rule¹² then employed hot baths on eleven human beings with syphilis. The patients received from one to fourteen baths, with an elevation of

mouth temperature to 105–106° F (40.6–41.1 C) for from thirty to fifty minutes. The eruptive lesions underwent marked and rapid regression. The serologic reactions were favorably influenced in practically all instances. At the conclusion of these observations, all were given the usual antisyphilitic chemotherapy. Schamberg and Tseng¹³ applied similar experiments to a few human syphilitic subjects, with essentially similar results.

Bessemans,¹⁴ of Ghent, and his associates have made valuable studies which demonstrate the feeble thermoresistance of *Spirochete pallida*. With the ingenious use of small thermocouples inserted into the scrotal chancres of rabbits it was shown that primary syphilis was cured by either local or general balneothermotherapy or arothermotherapy when the tissue temperature of the chancre was sustained at 104° F (40 C) for two hours or at 107.6° F (42 C) for one hour. Raising the rabbits' intratesticular temperature to the same levels after inoculation prevented the development of the disease.

The important researches of Carpenter, Boak, and Warren¹⁵ again emphasize the thermolability of *Spirochete pallida* and "suggest the practicality of fever therapy in the treatment of acute as well as chronic syphilis in man." Utilizing heat produced by the short radio waves of an ultrahigh frequency oscillator, they were able to prevent the development of chancres in twenty-one of twenty-five rabbits when treatments were begun four, five, and seven days after inoculation. In one treated rabbit a chancre developed, while the testis of another became edematous and indurated, increasing the duration and number of heatings caused the rabbits to become normal, two rabbits died. Eighteen untreated control rabbits developed the typical lesions of experimental syphilis. These workers also found that multiple unsustained fevers of from 105.8 to 107.6° F (41–42 C) destroyed *Spirochete pallida* in rabbits with active syphilitic lesions, as determined by reinoculation experiments. It was also found that one febrile period of six hours at a temperature of 106.7–107.6° F (41.5–42 C) was sufficient to destroy *Spirochete pallida*. The time interval between inoculations and fever treatment, or between

serologic reactions, as measured by the Kahn quantitative procedure, has occurred in all. The spinal fluid Kahn reactions remained negative in twenty-six instances, and were reversed to negative in five. There has been no evidence of clinical or serologic relapse in the patients treated with combined fever and chemotherapy.

With due regard to the small number of patients and the short interval of observation, these findings provide suggestive evidence that fever therapy alone or chemotherapy alone as applied to these patients) is often inadequate. These observations also suggest that combined fever and chemotherapy is a distinctly advantageous form of treatment for early syphilis, particularly in those patients who do not respond promptly to orthodox chemotherapy. It must be appreciated that this is strictly a preliminary report of the response of early syphilis to combined fever and chemotherapy. Every effort will be exerted to follow the progress of these patients, and others who follow, throughout their lifetime.

Under existing circumstances, strong forces operate to keep the patient with early syphilis from receiving adequate treatment. It requires about eighteen months of continuous therapy in cases of early syphilis and an indefinitely longer period for the treatment of late syphilis.²⁶ The high cost and inconvenience to the patient often result in inadequate treatment. More than a million persons seek authorized medical treatment for syphilis in the United States each year. Eighty-four per cent of the patients treated for early syphilis in five of the large clinics devoted to syphilis, failed to remain under treatment until the disease was rendered non-infectious. Usilton²⁷ has indicated that nearly two million persons in the United States are either inadequately treated or failed to receive any treatment for syphilis each year. Usilton has stated that "Syphilis as a treatment problem ranks first among the contagious diseases of man."

Any method that would appreciably decrease the time and expense involved in providing adequate therapy is worthy of thoughtful consideration. A growing body of evidence appears to indicate that artificial fever therapy fortifies and intensifies the curative action of chemo-

therapeutic agents. The advent of simpler and safer methods for the induction and maintenance of artificial fever should stimulate vigorous investigation of this possibility.

Neurosyphilis

Dementia paralytica Twenty-seven patients with dementia paralytica have completed the course of fifty hours of fever therapy plus thirty injections of chemotherapy. Twenty-one (77 per cent) have experienced clinical remission, three additional patients have been restored to a working status, two patients were accorded fifty per cent clinical improvement, one demented patient obtained no improvement. Clinical relapse has not occurred in any case in which remission occurred. Eight of these patients were committed to a local hospital for the mentally diseased, and were brought to the Miami Valley Hospital for treatment. Sixteen of the twenty-seven patients had received presumably adequate chemotherapy, two had relapsed after receiving malaria therapy, nine had received no treatment.

The Kahn serologic reactions were reversed to negative in seven, became less positive (Kahn quantitative procedure) in seventeen, and remained positive in three. The spinal fluid Kahn reactions were reversed to negative in six, became less positive in fifteen, and remained positive in six. The level of the colloidal gold reaction was reduced in nineteen, elevated in five, changed to negative in two, and remained unchanged in one. The spinal fluid protein content was reduced to approximately normal levels in fifteen, was elevated slightly in five, remained normal in four, and was unchanged in three. The spinal fluid cell count was either reduced to or remained within normal limits in all.

As with fever therapy induced with malaria, there is no parallelism between the immediate clinical response and the serologic or colloidal gold reactions. In most instances the serologic reactions become less positive or negative during a period of several months following the combined chemopvretotherapy.

Neymann and Osborne²⁸ have added to their own favorable experiences the observations of other workers in the appli-

clinically or serologically, during five years of observation

In the introduction to the Matuschka-Rosner monograph,⁶⁴ Finger makes this statement

The results are significant. They show that in the early period of syphilis nothing influences the serum and spinal fluid reactions so favorably as combined malaria arspenamine therapy, that a single course is usually sufficient, and that the earlier the treatment is begun, the better are the results

Kemp and Stokes²⁰ found that fever therapy induced by bacterial proteins, combined with arspenamine therapy and followed by arspenamine and bismuth therapy, offered a more satisfactory outlook in the treatment of early syphilis than routine chemotherapy alone

Richet and Dublneau,²¹ after experimentation with animals and human subjects, conclude that early syphilis may be "cured" more rapidly and more certainly by combined fever and chemotherapy than with chemotherapy alone. The blood serologic reactions of thirty-five of thirty-seven patients with primary and secondary syphilis became negative during or at the end of one course of pyretochemotherapy.

Wagner-Jauregg,⁶⁵ O'Leary,²² Jacobs and Vohwinkel,²³ Bering,²⁴ and others have repeatedly emphasized that the best form of treatment of neurosyphilis lies in its prevention by combined fever and chemotherapy during its asymptomatic phase. The extensive cooperative clinical studies carried out by Stokes, Cole, Moore, O'Leary, Wile, Clark, Parran, and Usilton²⁵ reveal that abnormal spinal fluid conditions were present in thirty-three per cent of patients with early syphilis, and in 56.1 per cent of patients with late secondary syphilis. The same observers have also stated that "even thoroughgoing (chemical) treatment does not necessarily prevent the development of abnormalities of the spinal fluid,"^{25b} and that in latent syphilis "almost all of the serologic response to be expected occurs within the first four months of treatment, thereafter further (chemical) treatment has little effect."^{25c}

On the basis of the foregoing observations it seems logical to conclude that the best results are obtained when combined fever and chemotherapy are applied early in the disease. With the hope that the

disastrous late neurologic, cardiovascular, and visceral manifestations of the disease might be prevented, we have subjected thirty-one patients with primary and early secondary syphilis to the combined fever and chemotherapy regimen (50 hours of sustained rectal temperature between 105–106° F (40.6–41.1 C) and 30 injections of antisyphilitic chemotherapy). None had received any previous treatment for syphilis. As a control measure, six patients with primary or early secondary syphilis were treated with only fifty hours of fever therapy at 105–106° F (40.6–41.1 C). In two of these patients clinical relapse (cutaneous eruption) occurred following the fever treatments, chemotherapy was promptly instituted. Of the four patients who have had fever therapy alone, the Kahn serologic reactions became less positive in all, the spinal fluid Kahn reactions remained negative in all.

A second control group of nineteen patients with primary or early secondary syphilis received thirty weekly injections of chemotherapy, without fever therapy. Clinical evidence of relapse (cutaneous eruption) occurred in four patients, fever therapy was then given, with prompt remission of the skin lesions. Of the fifteen patients who received only chemotherapy, the Kahn serologic reactions were reversed to negative in ten, became less positive in four, and became more positive (Kahn quantitative reaction) in one. The spinal fluid Kahn reactions remained negative in thirteen and were reversed to negative in two.

Including the six patients who were transferred from the two previous control groups, thirty-one patients with primary or early secondary syphilis were treated with combined fever and chemotherapy. The cutaneous manifestations of the disease including the chancres responded with surprising promptness. No living, motile spirochetes were found in any of the primary lesions after the first fever treatment. The Kahn serologic reactions were reversed to negative in seventeen, became less positive in eleven, and remained negative in three. Of the eleven patients whose serologic reactions became less positive, ten have been under observation for only six to nine months. Progressive decline in the intensity of the

serologic reactions, as measured by the Kahn quantitative procedure, has occurred in all. The spinal fluid Kahn reactions remained negative in twenty-six instances and were reversed to negative in five. There has been no evidence of clinical or serologic relapse in the patients treated with combined fever and chemotherapy.

With due regard to the small number of patients and the short interval of observation, these findings provide suggestive evidence that fever therapy alone or chemotherapy alone as applied to these patients is often inadequate. These observations also suggest that combined fever and chemotherapy is a distinctly advantageous form of treatment for early syphilis, particularly in those patients who do not respond promptly to orthodox chemotherapy. It must be appreciated that this is strictly a preliminary report of the response of early syphilis to combined fever and chemotherapy. Every effort will be exerted to follow the progress of these patients, and others who follow, throughout their lifetime.

Under existing circumstances, strong forces operate to keep the patient with early syphilis from receiving adequate treatment. It requires about eighteen months of continuous therapy in cases of early syphilis and an indefinitely longer period for the treatment of late syphilis.²⁷ The high cost and inconvenience to the patient often result in inadequate treatment. More than a million persons seek authorized medical treatment for syphilis in the United States each year. Eighty-four per cent of the patients treated for early syphilis in five of the large clinics devoted to syphilis, failed to remain under treatment until the disease was rendered non-infectious. Usilton²⁷ has indicated that nearly two million persons in the United States are either inadequately treated or failed to receive any treatment for syphilis each year. Usilton has stated that "Syphilis as a treatment problem ranks first among the contagious diseases of man."

Any method that would appreciably decrease the time and expense involved in providing adequate therapy is worthy of thoughtful consideration. A growing body of evidence appears to indicate that artificial fever therapy fortifies and intensifies the curative action of chemo-

therapeutic agents. The advent of simpler and safer methods for the induction and maintenance of artificial fever should stimulate vigorous investigation of this possibility.

Neurosyphilis

Dementia paralytica Twenty-seven patients with dementia paralytica have completed the course of fifty hours of fever therapy plus thirty injections of chemotherapy. Twenty-one (77 per cent) have experienced clinical remission, three additional patients have been restored to a working status, two patients were accorded fifty per cent clinical improvement, one demented patient obtained no improvement. Clinical relapse has not occurred in any case in which remission occurred. Eight of these patients were committed to a local hospital for the mentally diseased, and were brought to the Miami Valley Hospital for treatment. Sixteen of the twenty-seven patients had received presumably adequate chemotherapy, two had relapsed after receiving malaria therapy, nine had received no treatment.

The Kahn serologic reactions were reversed to negative in seven, became less positive (Kahn quantitative procedure) in seventeen, and remained positive in three. The spinal fluid Kahn reactions were reversed to negative in six, became less positive in fifteen, and remained positive in six. The level of the colloidal gold reaction was reduced in nineteen, elevated in five, changed to negative in two, and remained unchanged in one. The spinal fluid protein content was reduced to approximately normal levels in fifteen, was elevated slightly in five, remained normal in four, and was unchanged in three. The spinal fluid cell count was either reduced to or remained within normal limits in all.

As with fever therapy induced with malaria, there is no parallelism between the immediate clinical response and the serologic or colloidal gold reactions. In most instances the serologic reactions become less positive or negative during a period of several months following the combined chemopyretotherapy.

Neymann and Osborne²⁸ have added to their own favorable experiences the observations of other workers in the appli-

cation of artificial fever therapy by physical means to patients with dementia paralytica. Of 544 patients with dementia paralytica in all stages of the disease, 161 (30 per cent) obtained complete clinical remission, while 155 (29 per cent) were distinctly improved. Of forty patients with dementia paralytica treated by electropyrrexia, Neymann and Osborne obtained complete remission in twenty-five (62 per cent), and four additional patients were improved.

Hinsie and Blalock¹ have subjected 105 patients with dementia paralytica of the adult type to pyretotherapy, utilizing the short radio waves produced by an ultrahigh frequency oscillator. For purposes of comparison the patients were divided into three groups.

The first group, of fifty-one patients, was treated by artificial fever therapy only.

The second group, twenty-seven patients, was treated with an equivalent amount of thermotherapy and received six months later either tryparsamide and mercury therapy or a course of inoculated malaria.

The third group, of twenty-seven patients, received a similar course of pyretotherapy, followed immediately by one or more courses of tryparsamide and mercuric salicylate in oil.

The results achieved in the first two groups revealed that the addition of chemotherapy or malaria therapy after an interval of six months was of little or no benefit. In the group of patients treated by thermotherapy followed directly by chemotherapy, the clinical results were distinctly better. The remission rate of the patients of the first two groups one year after treatment was 21.7 per cent, while the remission rate one year after the termination of treatment in the third group of patients, who received pyretotherapy followed immediately by chemotherapy, was thirty-seven per cent.

Tabes dorsalis. Fourteen patients with tabes dorsalis received the course of fever-chemotherapy. All had received presumably adequate chemotherapy, three had received malaria therapy followed by a temporary remission. Ataxia (in all patients) and lancinating pains or gastric crises (in thirteen patients) were the chief complaints. Two patients with ataxia of three months' duration in one case, and of two years' duration in the other, were restored to normal gait, five

patients obtained seventy-five per cent improvement in gait, two obtained fifty per cent improvement in gait, and two obtained no improvement in gait. There appeared to be a direct relationship between the degree of improvement and the duration of the gait disturbance.

The root pains were abolished in all. Often the pains disappeared after the first two or three treatments. Recurrence of root pains occurred in three patients after the usual course of treatment; these patients required additional treatments to control the pains. Normal function was restored in two cases of urinary and fecal incontinence.

The Kahn serologic reactions were reversed to negative in four patients, became less positive in three, remained negative in one, and remained positive in six. The spinal fluid Kahn reactions were reversed to negative in three, became less positive in four, remained positive in three, and remained negative in four.

Tabetic form of dementia paralytica. Eight patients with the tabetic form of dementia paralytica were subjected to the combined treatment. All had previously received chemotherapy without influence upon the course of the disease, two had also received malaria therapy, followed by remission, lasting six months in one instance and one year in the other. Improvement in mental orientation occurred in six, two demented patients died, one seven months after the treatment was completed, the other fifteen months following the treatment. Subsidence of root pains occurred in all, in two instances additional fever treatments were required. Improvement in gait occurred in four of five patients with ataxia, one patient who had had a tabetic gait for three months was restored to normal gait. One patient with a "cord bladder" regained normal control of bladder function.

The Kahn serologic reactions were reversed to negative in two instances, became less positive in two, remained negative in three, and remained positive in one. The spinal fluid reactions were reversed to negative in four, became less positive in three, and remained positive in one.

Diffuse central nervous system syphilis. In this group are placed twenty-three patients with various manifestations of

symptomatic neurosyphilis, which could not be definitely classified as dementia paralytica, tabes dorsalis or the tabetic form of dementia paralytica. Nineteen of these patients had received presumably adequate chemotherapy, four patients had received no chemical therapy. There were eight cases of congenital syphilis and fifteen cases of acquired syphilis. Included in this series are sixteen cases in which symptoms and signs of exudative ocular syphilis predominated. Two patients had experienced hemiplegia following cerebral thrombosis, fever therapy exerted very little influence upon the residual effects of the hemiplegia. Among the twenty-three patients of this group, sixteen patients obtained symptomatic relief, five were moderately improved, two obtained no improvement. The Kahn serologic reactions were reversed to negative in four, became less positive in fourteen, remained positive in three, and remained negative in two. The spinal fluid Kahn reactions were reversed to negative in six, became less positive in three, remained positive in three, and remained negative in eleven.

Asymptomatic neurosyphilis. Of seven patients with asymptomatic neurosyphilis, all of whom had received apparently ineffectual chemotherapy, the spinal fluid Kahn reactions were reversed to negative in all. The Kahn serologic reactions were reversed to negative in four, remained negative in two, and became less positive in one. None has shown evidence of serologic relapse.

Ocular syphilis

Ocular complications²⁰ existed in fifty-eight of the syphilitic patients, including four patients with double classification (conjugate palsy and optic atrophy, uveitis and optic atrophy, uveitis and neuroretinitis, and neuroretinitis and choroiditis). The ocular complications may be classified as follows:

1 Extraocular palsies	4
2 Interstitial keratitis	11
3 Exudative uveitis	10
4 Optic neuritis and neuroretinitis	14
5 Choroiditis	7
6 Optic atrophy	16
	62

In the evaluation of the response of four patients with extraocular palsies to artificial fever therapy there was no evidence

that this method is superior to older forms of treatment.

Among the eleven patients with interstitial keratitis were eight who had experienced recurrences and ten who had failed to respond to chemotherapy. The duration of the disease and the tendency towards recurrence appear to be distinctly lessened following adequate fever therapy combined with chemotherapy. The response is most prompt in those cases in which an opaque central disc of plastic exudate exists. It is usually this type of the disease which produces the greatest visual damage.

In ten cases of exudative uveitis prompt clinical improvement became apparent in every instance after the first one or two fever treatments. With the exception of one patient who had advanced old degenerative changes, all have recovered useful vision. One patient experienced a mild recurrence, probably because of inadequate fever therapy. With due regard to the small number of cases in this series, the results were so uniformly favorable that we regard combined fever-chemotherapy as the treatment of choice in syphilitic exudative uveitis.

Favorable response occurred in the lesions of fourteen patients with optic neuritis and neuroretinitis. All recovered useful vision although nine have some residual pallor of the disc and some degree of field contraction. Active neuritis along the optic tract appears to be arrested by fever therapy.

Active choroiditis in seven patients subsided with fever therapy with residual scars and field defects. Good central vision has resulted in all but one eye.

In sixteen patients with optic atrophy the visual acuity and visual fields remained practically unaltered after a course of combined fever-chemotherapy. If optic atrophy is associated with foci of active infiltration along the optic tract it is quite probable that such exudative lesions will respond to fever therapy. Optic atrophy is not a contraindication to fever therapy.

From these observations it seems quite apparent that artificial fever therapy is most effective in the exudative lesions of ocular syphilis, and that the best results are obtained when pyretchemotherapy is instituted promptly after the first appearance of the exudative lesions.

Resistant seropositive syphilis

Included in this study were ten patients with so-called "Wassermann-fast" syphilis, or what we prefer to term resistant seropositive syphilis. All had had presumably adequate chemotherapy for at least two years. The Kahn serologic reactions were reversed to negative in five, became less positive in four, and remained positive in one. The spinal fluid Kahn reactions remained negative in all. Serologic relapse has not occurred in any of these patients.

II Treatment of gonococcic infections

It has long been known that *Neisseria gonorrhoeae* is a particularly thermolabile organism. There are many records of spontaneous recovery or remissions from the manifestations of gonococcic infections during intercurrent febrile disease. It is also well known that the gonococcus soon disappears and is replaced by secondary invaders when it reaches deep tissues, such as the Fallopian tubes. Neisser and Scholtz³⁰ found it difficult to cultivate the gonococcus in patients with fever. Bacteriologists have recognized that the organism does not grow well on artificial mediums at temperatures of 100.4°F (38°C) or above.

The recognition that fever exerts a favorable influence upon gonorrhea and its complications has led to treatment with fever produced by malaria inoculation or with chemical or foreign protein substances. While some satisfactory clinical results have been obtained by such methods, they have the drawback of being inconstant in their fever-producing properties and frequently provoke serious, uncontrollable, and occasionally fatal reactions. Localized fever treatments have been carried out, for the most part with high frequency electric currents such as diathermy or radiothermy. The chief objection to this procedure is that the heat treatment is limited to a localized area. Patients with gonococcic arthritis are suffering from a systemic disease, requiring systemic treatment.

The indefinite, and often contradictory, reports of the thermal death time of *Neisseria gonorrhoeae* have been clarified by the extensive thermal death time gradient studies made recently by Car-

penter, Boak, Mucci, and Warren.³¹ When it became apparent that gonococcic infections responded to artificial fever therapy if the fever was sustained for long periods at a high level, these workers set out to determine the thermal death time gradient of the gonococcus when subjected to temperatures that can be tolerated by man. The *in vitro* thermal death time of fifteen strains of *Neisseria gonorrhoeae* was determined at different temperature levels. Some of the strains had been under artificial cultivation for many years, while others had been isolated one to four months previously. At 102.2°F (39°C) growth was not appreciably affected. At 104°F (40°C), about 99.7 per cent of the organisms were killed by ten hours' exposure. At 105.8°F (41°C), ninety-nine per cent of the gonococci were destroyed in from four to five hours' exposure, the remaining one per cent required eleven to twenty-three hours. At 106.7°F (41.5°C) and 107.6°F (42°C), ninety-nine per cent of the gonococci were rendered non-viable in two hours, while the remaining one per cent required five to twenty hours. The cultures which had been under cultivation for only a short period were most susceptible to heat. From these studies it became apparent that it would be possible in most instances, to exceed the thermal death time of the organism without injury to the human host, by adapting the temperature level in patients with gonococcic infections to the thermal death time of the organism. We have repeated the experiments of Carpenter, Boak, Mucci, and Warren with essentially identical results.

There is, therefore, convincing evidence, based upon *in vitro* thermal death time studies and the clinical response of patients with gonococcic infections to artificial fever therapy, that it is possible, in most instances, to destroy gonococci in the various lesions of the disease with high sustained body temperature. In addition to this sterilizing effect, there is also evidence which indicates that artificial fever therapy stimulates immune reactions. In four of our patients with gonococcic urethritis, gonococci were present after four fever treatments. The organisms disappeared in from two to four weeks in these patients, providing

evidence that the stimulus to immune reactions produced by fever was responsible for the ultimate disappearance of the gonococci. Carpenter, Boak, and Warren³² have suggested that the duration of the fever treatment should be based upon the thermal death time of the strain of gonococcus responsible for the disease in each individual patient. They subjected eleven patients to a single fever treatment at 106.7° F (41.5 C), equal in length to the thermal death time (5 to 17 hours) of the cultures obtained from individual patients, following which there was a prompt disappearance of the gonococci and all clinical evidence of the disease. Similar results were obtained in nine patients when the fever period was one-fourth to three-fourths of the thermal death time, suggesting the assistance of the defense factors in the body in the disappearance of the disease.

In practice, we have found important objections to such a plan. It sometimes requires several days to carry out accurate thermal death time determinations. Occasionally the organism is recovered with difficulty. Individual patients may harbor multiple strains, which differ in their heat resistance. In rare instances, highly resistant strains require twenty or more hours at temperatures of 107° F (41.7 C) or above before they are destroyed.

For practical purposes we have found that four or five treatments, each of five to seven hours' duration, at a rectal temperature range of 106° F (41.1 C) to 107° F (41.7 C), at intervals of three to five days, are productive of prompt and satisfactory results in the great majority of cases. Early in the course of this undertaking, it was our practice to give the treatments at intervals of one week or longer. The more promptly favorable results obtained by Desjardins, Hench, Stuhler, and Popp,^{33, 35} convinced us of the necessity for altering our technic by giving the treatments at shorter intervals. The average interval between treatments during the first part of our work was 6.14 days. During the past two years the average interval between treatments has been 4.07 days. The average number of treatments was 4.9. Four treatments at intervals of three to five days, the interval depending upon the general condition of the patient and his tolerance of the

treatments, are usually regarded as a minimum course. If all evidence of activity, in either the joints or the genito-urinary tract, has not disappeared, additional treatments are given at equivalent intervals.

Gonococcic arthritis

One of the most frequent and disabling complications of gonorrhea is gonococcic arthritis. In a high proportion of cases permanent deformity and disability, affecting one or several joints, is the end result. The fact that so many different methods of treatment have been employed provides evidence of the inadequacy of most or all of them.

During the past three years, the outlook for patients with gonococcic arthritis has been enormously improved.

In March 1932, a thirty-nine year old man was referred to us for artificial fever therapy because of resistant seropositive syphilis. The history and physical examination revealed that the patient also had active chronic gonococcic arthritis of five months' duration, involving the right wrist. Gram-negative intracellular diplococci were found in large numbers in urethral smears. After the third artificial fever treatment, each of which consisted of five hours of fever above 105° F (40.6 C) at intervals of one week, all evidence of active gonococcic arthritis had disappeared. The joint function, which had been practically nil, was restored to ninety per cent of normal. The urethral smears became negative for gonococci after the fourth treatment and have remained negative since that time. Encouraged by this coincidental observation we decided to treat other cases of gonococcic arthritis.

Scattered reports^{36, 45} of favorable experiences in the treatment of gonococcic arthritis with artificial fever therapy have appeared in medical literature since 1932. The results obtained with a variety of physical modalities have been summarized and tabulated in a recent communication by Hench, Slocumb, and Popp.³⁴ Of thirty-three cases mentioned in the nine reports reviewed by these authors, data on the results obtained in the treatment of twenty-four patients could be calculated. Of these twenty-four patients, twenty-two (92 per cent) were "completely relieved" or "cured." Failure resulted in only two cases (8 per cent) and was attributed to inadequate fever production. Hench,

Slocumb, and Popp have treated sixteen patients suffering from gonococcic arthritis with artificial fever therapy, utilizing the Kettering hypertherm. Nine of the patients had acute arthritis, while seven had the disease in a chronic form. Eighty-eight per cent of the patients with acute gonococcic arthritis were promptly "cured," or practically so, while the remaining twelve per cent obtained marked improvement. Of the seven patients with chronic gonococcic arthritis, all but one were markedly improved. The authors state

In gonococcic arthritis, results are so striking and apparently so superior to those obtained by other methods, that we can prescribe fever therapy as the method of choice with considerable assurance.

Schnabel and Fetter⁴⁶ have reported their experiences in the treatment of eighteen patients with gonococcic arthritis, also utilizing the Kettering hypertherm. Of the nine patients with the acute form of the disease, six were cured, two obtained marked improvement, and one inadequately treated patient received moderate improvement. Five of the nine patients with chronic gonococcic arthritis (of more than six weeks' duration) were cured, three were markedly improved while one received only moderate improvement.

Anderson, Arnold, and Trautman⁴⁷ and Faget⁴⁸ of the U. S. Public Health Service (Marine) Hospitals at New Orleans and Norfolk, treated twenty-four patients with gonococcic arthritis, all but two were cured with one to seven treatments, the remaining two patients received distinct benefit.

We have completed the course of treatment of forty-five patients with gonococcic arthritis. Thirty-one were suffering with the acute form of the disease (less than eight weeks' duration), while fourteen had chronic gonococcic arthritis. Patients were not selected. The only requirements were that a diagnosis of gonococcic arthritis could be established and that the physical condition of the patient would permit him to tolerate the treatments. Contrary to common belief, multiple joints were usually affected. In thirty-two of the patients (71 per cent), the disease was polyarticular. Thirty-two of the forty-five had received some form of local chemical treatment of the genitourinary tract be-

fore the onset of arthritis. In the male patients this usually consisted of the installation of a silver preparation into the urethra. At the time of the diagnostic survey, prior to the institution of fever therapy, the urethra or cervical smears of thirty-two patients revealed the presence of gram-negative intracellular diplococci. Of the thirteen patients with negative smears, all had had positive smears just prior to the time of their admission to the Miami Valley Hospital. In no case was the infection restricted to the anterior urethra in the male. Of the ten female patients there were two with pelvic cellulitis, one with urethritis and Bartholinian abscess, and seven with acute cervicitis. Of the seven with acute cervicitis, two had urethritis, one had urethritis and bilateral salpingitis, one had bilateral salpingitis, and one had bilateral salpingitis and left tubo-ovarian abscess. Following the course of fever therapy for the treatment of gonococcic arthritis, all evidence of gonococcic infection of the genitourinary tract had disappeared in thirty-eight patients (84 per cent). Of the seven patients with persistence of genitourinary gonococcic infection, all evidence of the disease disappeared in four patients within two to four weeks without additional fever or local treatments. Two of the remaining patients with persistent genitourinary infection had received inadequate fever therapy (less than three treatments), the third had received apparently adequate fever therapy (five treatments), but the urethral smears remained positive. Supplemental local treatment eliminated all evidence of gonococcic infection of these three refractory patients.

Of the thirty-one patients with acute gonococcic arthritis, the average improvement in joint function immediately following the conclusion of the course of fever treatments was eighty per cent, in ten patients the restoration of joint function was complete. At the time of writing, the average improvement in joint function in the thirty-one acute cases is 99.7 per cent, twenty-nine of the patients with acute gonococcic arthritis now have complete restoration of joint function. Of the fourteen patients with chronic gonococcic arthritis the average improvement immediately following the course of fever therapy was 66.1 per cent. Of the fourteen

patients with chronic gonococcic arthritis, the average improvement at the time of writing is 92.8 per cent, seven patients have obtained complete restoration of joint function.

Worthy of particular mention are our experiences with two cases of chronic gonococcic arthritis, in which almost complete limitation of motion of one knee joint remained after the usual course of fever therapy. After all evidence of active inflammation had disappeared, the joints were manipulated under general anesthesia (brisement force) in order to separate the fibrous adhesions. Fever therapy was immediately instituted following the surgical manipulation. In both cases practically complete joint function has been restored. Orthopedic management is a requirement in those cases of chronic gonococcic arthritis in which partial ankylosis has occurred prior to the institution of fever therapy.

Gonococcic infections, other than arthritis

The distinctly favorable experiences of Desjardins, Stuhler, and Popp,^{33, 35} Bierman and Horowitz,⁴⁰ Carpenter, Boak, and Warren,³² Anderson, Arnold, Trautman, and Faget^{47, 48} have provoked a lively interest in the fever therapy of gonococcic urethritis, cervicitis, vaginitis, salpingitis, prostatitis, seminal vesiculitis, epididymitis, ophthalmia, and dermatitis blennorrhagicum. Desjardins et al., subjected seventy-six patients with simple or complicated gonococcic infection to fever therapy in the Kettering hypertherm, of these, sixty-eight (89.5 per cent) were cured, and the condition of seven (9.2 per cent) was improved, in only one patient did the infection prove refractory to fever treatment. The average number of treatments was six. In a report of the progress of these patients, Stuhler⁵⁰ stated:

I believe that the introduction of fever therapy for gonococcic infections is one of the greatest advances made in the last fifty years. I believe it is of even greater importance to the clinician than was the discovery of the gonococcus by Neisser in 1879.

Bierman and Horowitz⁴⁰ have achieved excellent results by an ingenious combination of systemic hyperpyrexia (105-

107° F, 40.6-41.7 C) with simultaneous additional heating of pelvic structures (to 111-112° F, 43.8-44.4 C) by diathermy electrodes especially adapted to the vagina or rectum.

We have treated twenty-eight patients with gonococcic infection, other than gonococcic arthritis. There were twenty-three men and five women, whose ages ranged from eighteen to fifty-eight years. Eighteen were suffering with the acute form and ten with the chronic form of the disease. Eighteen patients (64 per cent) had received some form of local chemical treatment of the genitourinary tract prior to the institution of artificial fever therapy. Eight patients with acute gonococcic urethritis had received orthodox local treatment for an average of five weeks prior to fever therapy, the ten patients with chronic gonococcic urethritis had received local treatment for from two months to five years.

The average interval between the onset of gonorrhea and the institution of fever therapy was twenty-four days in the acute cases, in seven of the chronic cases the average interval was seven and one-half months, while the interval was from four to seven years in the remaining three cases.

Only one of the male patients had simple acute anterior urethritis, in all of the others there was extension to the posterior urethra, prostate, seminal vesicles or epididymis. In none of the five female patients was the infection localized to the urethra or cervix. All had pelvic cellulitis, while one had associated Bartholinian and bilateral tubo-ovarian abscesses.

The average number of treatments given to the twenty-eight patients was 3.32, approximately the same number of treatments were given to patients with either the acute or chronic form of the disease.

The average interval in the treatment of the first nineteen patients was 6.58 days. After we had learned that favorable results were more prompt and uniform when the interval between treatments was shortened, we altered our program. The last nine patients to be treated received an average of 3.5 treatments at an average interval of three days.

At the conclusion of the course of

fever therapy all evidence of gonococcal urethritis and its complications had disappeared in twenty-five (89 per cent) of the twenty-eight patients. No other form of treatment was employed in these patients. In one patient gonococcal ophthalmia responded to the first treatment. In two patients with dermatitis blennorrhagicum, the skin lesions disappeared after one treatment in one case and after two treatments in the other. Two male patients and one female patient, treated at irregular and long intervals (7 to 14 days), had persistently positive smears or cultures. All received apparently inadequate fever therapy (two treatments in two cases and three treatments in the third). In the female patient, who had acute gonococcal cervicitis and bilateral salpingitis, the pelvic complication disappeared after fever therapy, but positive cervical smears remained. After additional local treatment, the smears of all three became negative within two weeks.

Comment

With two exceptions, all of the persons with syphilis were treated as ambulatory patients. During the past year we have found that it is distinctly advantageous to admit patients with gonococcal infections to the hospital for a period of two weeks. We have found this to be particularly desirable in cases of gonococcal arthritis. This plan permits close supervision of the patient and eliminates the uncooperative patient.

Artificial fever therapy by physical means is not a simple undertaking. In the hands of unskilled or unscrupulous persons it is fraught with danger. History is repeating itself in the attempts of certain manufacturers to exploit the field by utilizing modern high-pressure sales methods. Some of the apparatus now available through commercial sources is inadequate and dangerous and is sold to any physician without thought of adequate training of the supervising physicians and his technical assistants. Three important considerations are involved in the proper application of artificial fever therapy. The *first* is the thorough training of the supervising physician in the physical and the physiologic aspects of the undertaking. The *second* is the adequate training of the nurse-technicians. The *third*, and perhaps

the least important consideration, is the apparatus. The undertaking is in many respects comparable to a major surgical operation, particularly as regards the necessity for a careful diagnostic survey to determine eligibility and the constant attention to the patient by physician and nurse-technician during the long treatment. It is well to re-emphasize the obvious, but too often disregarded fact, that skill of personnel far transcends in value the perfection of matériel. The nurse-technician should receive at least one to two months of special training before undertaking this work. Exceptional alertness and intelligence are primary qualifications.

It seems quite apparent that artificial fever therapy by physical means should be restricted to institutions in which the physician and nurse personnel has received adequate preliminary training. The production of effectual artificial fever is not adaptable to ordinary office practice. Unless these precautions are exercised this important adventure in therapeutics is almost certainly doomed to a period of discredit not unlike that which followed the introduction of Roentgen rays. In the hands of skilled and devoted workers this form of therapy seems destined to occupy an increasingly important place in therapeutics.

Summary and Conclusions

- 1 The value of artificially induced fever therapy as an adjunct to chemotherapy in the management of neurosyphilis is now firmly established. The one factor common to the wide variety of infections, chemical, and physical methods that have yielded comparable therapeutic results appears to be simple fever production.

- 2 A simplified, controlled, and relatively inexpensive method for fever induction and maintenance (Kettering hyperthermia) has been devised. High frequency electric currents are not employed. During the past four years, 431 patients have been subjected to 3,204 artificial fever treatments, without any serious ill effects related to the method of treatment.

- 3 The frequent observation that the best results occurred when neurosyphilis was treated by combined fever and chemotherapy during its earliest mani-

festations led us to apply the treatment to patients with primary or early secondary syphilis. The results provide evidence that fever therapy may be of great value in early syphilis, particularly when chemotherapy alone appears to be inadequate.

4 The results obtained in the treatment of symptomatic neurosyphilis, asymptomatic neurosyphilis, ocular syphilis, and resistant seropositive syphilis are at least comparable, if not superior, to the results obtained with the more hazardous, time consuming, and inconstant malaria therapy.

5 Hospitalization is not a requirement for fever therapy by physical means.

6 The advent of simpler and safer methods for the production of artificial fever should stimulate vigorous investigation of the possibility that the time, effort, and expense involved in the adequate therapy of syphilis may be greatly lessened.

7 There is evidence that artificial fever therapy fortifies and intensifies the action of antisyphilitic chemotherapeutic agents.

8 High, sustained, controlled artificial fever is the treatment of choice for gonococcal arthritis. Gonococcal arthritis is a manifestation of a systemic disease, requiring systemic treatment.

9 *In vitro* thermal death time studies, and the clinical response of patients with gonococcal infections to artificial fever therapy, indicate that it is possible, in most instances, to destroy gonococci in the various lesions of the disease with high, sustained body temperature. In addition to this sterilizing effect, there is evidence that artificial fever therapy stimulates immune reactions.

10 Forty-five patients with gonococcal arthritis, associated with gonococcal infection of the genitourinary tract, have been treated with artificial fever therapy. Of thirty-one patients with acute gonococcal arthritis, the average improvement in joint function immediately after the conclusion of the course of fever therapy was

eighty per cent, in ten patients the restoration of joint function was complete. The ultimate average improvement in joint function in the cases of acute gonococcal arthritis was 99.7 per cent, twenty-nine have obtained complete restoration of joint function. Of the fourteen patients with chronic gonococcal arthritis the average improvement in joint function at the conclusion of the course of fever therapy was 66.1 per cent, the ultimate improvement in joint function in these cases was 92.8 per cent, in seven patients all evidence of joint disease disappeared. After the course of fever therapy, all evidence of genitourinary tract infection had disappeared in thirty-eight patients. The smears and cultures of four additional patients became negative within two to four weeks without additional treatment of any kind. Supplemental local treatment eliminated all evidence of gonococcal infection in the remaining three refractory patients, two of whom had received inadequate fever therapy.

11 In two cases of chronic gonococcal arthritis almost complete limitation of motion of one knee joint remained after the course of artificial fever therapy. Orthopedic manipulation (brisement force) under general anesthesia was done to separate the fibrous adhesions. Artificial fever therapy was instituted immediately following the surgical manipulation. Practically normal joint function was restored in both cases.

12 In twenty-eight patients with gonococcal infection, other than gonococcal urethritis, all evidence of gonococcal urethritis and its complications had disappeared in twenty-five (89 per cent) at the conclusion of the course of fever therapy. The remaining three patients received apparently inadequate fever therapy.

13 It would appear that the therapeutic armamentarium of the venereologist is now provided with a new and powerful weapon.

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NOTICE OF EXAMINATION

An examination by the American Board of Otolaryngology of two days duration, including both written and oral tests, will be held in New York City, September 25 and 26, just prior to the meeting of the American Academy of Ophthalmology and

Otolaryngology. Prospective applicants for certificate should secure application blanks from the Secretary, Dr W. P. Wherry, 1500 Medical Arts Building, Omaha, Neb. No certificate will be granted without examination.

THE UNRULY MEMBER

We should never make the mistake of thinking that unfavorable comment on another man's work will enhance our own prestige, says Dr Delivan A. MacGregor, of Wheeling, W. Va., in a paper read before his county medical society. Usually it serves to decrease the patient's confidence in and respect for the whole profession. Speaking for myself, I confess that it took me a long time to learn this lesson. Even after twenty years of painful experience, I sometimes have an urge to tell a patient that it appears that his tonsils were gouged out with a

potato peeler, or that his operation for chronic appendicitis probably was unnecessary. How quickly the patient or his friends take the story back to the first doctor! Even if you do not actually criticize the previous work, your remarks may be distorted by the patient, who really does not understand half you say anyway, and a very unpleasant version may reach your colleague's ears. I think it is a good plan to search out something very favorable to say, if that is possible, and say it emphatically so that there may be no hint of criticism.

DETERMINING THE INDUSTRIAL NATURE OF A DERMATITIS

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There has been an increasing general tendency to recognize the causal connection between industrial occupations and certain skin eruptions. This tendency has been fairly accurately reflected in this country by the general broadening of the compensation laws and their interpretation. In view of the complexities and difficulties of the problems presented, it is undoubtedly true that dermatologists, and in particular dermatologists with special and specific training in industrial skin diseases, should constitute the courts of last appeal in the decision as to whether or not a given dermatosis is actually attributable to the effects of industrial exposure. In spite of this obvious desirability that the final adjudication of these moot cases be left to a board of competent and qualified dermatologists, the present system unfortunately often necessitates that such decisions be made by non-dermatologists and by lay referees, judges, and juries.

The following definition the suggested criteria for establishing the industrial nature of a given case and the description of common errors are therefore intended as a guide, not only for dermatologists but also more particularly for the general medical and lay persons who are now called upon to decide as to the industrial nature of a given skin eruption.

It seems timely to submit this material now, as New York State has recently (1935) passed a law which makes compensable all dermatoses contracted in industrial pursuits^{1,2} and as a result of this, more and more cases are daily being considered and adjudicated as of either industrial or non-industrial nature.

TABLE I—DEFINITION AND THE LIMITATIONS OF MEDICAL PROOFS

DEFINITION

Industrial Dermatitis An inflammatory skin affection in which the pursuit of an industrial occupation can be shown to be a major eliciting factor ("Industrial Dermatitis" is a subcategory of Occupational Dermatitis for Occupational Dermatitis" includes not only "Industrial Dermatitis" but also all other dermatitides attributable to any occupational pursuits and excluding those of non-industrial nature.)

PROOF

The proof of the industrial nature of a dermatitis cannot depend entirely upon medical evidence, but to a great degree also upon legal considerations. From the medical viewpoint there can be no proof absolute of the industrial nature of a given case. But there are certain medical criteria which indicate, with a high degree of probability, that a certain case of dermatitis can be considered attributable to the industrial occupation of the affected individual.

TABLE II—MEDICAL CRITERIA FOR ESTABLISHING PROOF OF THE PROBABLE INDUSTRIAL NATURE OF A GIVEN DERMATITIS

Criteria of the First Order (Indispensable criteria)

- 1 **Inception** The dermatitis appears at any time during a period of industrial exposure, or even after the lapse of a reasonable incubation period following the cessation of the industrial exposure (usually two to three weeks as a maximum)
- 2 **Amelioration** The dermatitis repeatedly disappears, or is repeatedly improved within a reasonable period after cessation of the specific industrial exposure. (While the above is usually the case, retention of causal agents, complications, or ensuing polyvalent sensitization may prolong the course even up to several years after the last industrial exposure.)
- 3 **Recurrences and exacerbations** The dermatitis shows a tendency repeatedly to recur or exacerbate when the worker returns to the identical industrial exposure after a certain period of absence (provided there has been no change in working conditions or in the individual's manner of working)

TABLE III—MEDICAL CRITERIA FOR ESTABLISHING PROOF OF THE PROBABLE INDUSTRIAL NATURE OF A GIVEN DERMATITIS

Criteria of the Second Order (Adjutant Criteria)

- 1 The dermatitis appears first in, and is usually confined to the areas of maximum exposure (in a small percentage of cases it spreads to apparently unexposed areas or even becomes generalized)
- 2 The morphe and localization of the dermatitis correspond to the morphe and localization of dermatitides known to have been caused by exposure to the same industrial hazards (While many different substances and procedures

ures can produce similar or identical eruptions, there are certain classes of substances and of procedures which regularly produce fairly characteristic lesions)

3 The application of the presumptive causal agents to an unaffected skin site close to the site of the dermatitis produces a reaction, provided this application is made either during the active phase or after an interval following the cessation of the dermatitis

4 The skin tests produce reactions of the same fundamental nature as the dermatosis under investigation

5 Other workers similarly occupied are or have been similarly affected

6 The dermatitis appears soon (days to weeks) after beginning work involving new hazards

7 The dermatitis is proven to be of possible occupational nature, that is, it is shown to be of the type which may result from the industrial exposure sustained. It must be determined that the dermatitis under consideration is not a non-industrial eruption of such dermatoses as seborrheic dermatitis, psoriasis (including pustular psoriasis), parapsoriasis, lichen planus, dermatitis herpetiformis, multiform erythema, certain types of non-industrial fungus- and other infections non-industrial impetigo and other pyodermas, acrodermatitis continua, non-occupational drug eruptions, herpetic eruptions, nevroid and other skin anomalies, non-industrial dermatitis exfoliativa, neurodermatitis, atopic dermatitis, and particularly non-industrial dermatitis venenata (It must however, be borne in mind that the presence of such a non-industrial dermatosis by no means excludes the possible co-existence of an industrial dermatitis. Moreover on the one hand, the existence of such a non-industrial dermatosis may even predispose to industrial dermatitis, and, on the other hand, industrial exposures may elicit attacks or produce exacerbations of such non-industrial dermatoses)

TABLE IV—SOME COMMON ERRORS IN THE DETERMINATION OF THE INDUSTRIAL NATURE OF A DERMATITIS

The dermatitis is erroneously considered to be industrial because —

A It is a dermatitis venenata occurring in a worker in an industry in which dermatitis venenata is known to occur (For example, such a dermatitis venenata may be due, in the specific case, to non-industrial exposures—home exposures to dyes, cosmetics, toilet articles insecticides, clothing, paint, varnishes, plants etc.—exposures to substances encountered in hobbies or avocations—photography painting sports, etc.)

B It is accompanied by a positive patch test to a substance or substances encountered in the industry

(Such a positive test cannot be considered con-

clusive, for it may be due to (1) the application of a primary irritant or of a primary irritant concentration, or (2) the fact that the test never accurately reproduces the conditions of actual industrial exposure, therefore, a positive reaction may mean simply a certain skin sensitivity to a certain substance when applied in a certain concentration and manner at a certain time to a certain site, while this same substance may nevertheless be incapable of causing dermatitis under the actual conditions of industrial exposure)

TABLE V—SOME COMMON ERRORS LEADING TO THE DECISION AS TO THE NON-INDUSTRIAL NATURE OF A DERMATITIS

The dermatitis is erroneously considered to be non-industrial because

A It is accompanied by the finding of fungi or other micro-organisms in the lesions or in a distant focus (Fungi—pathogenic and non pathogenic—and certain other micro-organisms—staphylococci, streptococci, yeasts, and moulds—are almost universally found on the skin of adults in the U S A. Their presence does not, therefore, constitute proof that a dermatosis is of non-occupational nature)

B It is accompanied by a positive reaction to extracts of fungi or of certain other micro-organisms (Such reactions are too common to be of weight in ruling out the industrial nature of a given case, these reactions merely show that the individual has had a prior sensitizing exposure to the same or to an immunologically related micro-organism—comparable to tuberculin reactions)

C The patch tests with the substances of the industrial exposure are negative

(Such negative tests cannot be considered conclusive. They may be due to (1) local differences in sensitivity. The skin area tested may be non-sensitive, while other areas, and particularly the areas involved, may be sensitive (2) Chronologic differences in sensitivity. An individual's skin, sensitive at the time of industrial contact, may be non-sensitive to the actual causal substances at the time of skin testing (3) The fact that the actual causal substance or substances, or the causal combination or causal intermediates, may not have been applied (4) The fact that the concentration employed may have been too weak, or that the test application may have been otherwise inadequate, or that the vehicle employed may have been incorrect, or may have prevented penetration, or exerted some protective or neutralizing effect (5) The fact that the test never accurately reproduces the actual conditions of industrial exposure. Repeated contact, friction maceration heat cold, sweat, etc may be necessary additional factors enabling the substance negative in the test nevertheless to cause dermatitis under conditions of industrial exposure)

The material in the above tables (I-V) is intended to apply only to cases of *dermatitis*, and not to the numerous other industrial dermatoses such as industrial acnes, industrial infections of the skin, industrial skin cancers and other tumors, industrial keratoses, and industrial skin injuries.

While I am fully aware of many inadequacies in these tables, it is nevertheless my hope that they will prove to be of some practical value. So far as I know, the information here presented has not been previously assembled in clear and concise form in any one place in the

pertinent literature. It would seem, therefore, that this tabular presentation will serve as at least a rough guide to those who are called upon to make the difficult decisions as to the industrial nature of certain dermatitides.

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EX CRIPPLES WHO WON OLYMPIC MEDALS

A true story that may be helpful in preserving the morale of crippled youngsters is related in *Health Digest* as follows:

A little red schoolhouse is on fire. Children watch in awe as the flames dart out between dark billowy clouds of smoke. Suddenly, one of the boys lets out a startled cry and dashes into the midst of the blazing timbers. He had just discovered that his brother is still in there.

A few moments later he appears again at the doorway dragging his brother. Then, fearfully burned, friends carry him off.

Long hours of suffering follow. But the courage which gave him strength to dash into the inferno, carries him on to recovery. However, great streaks of scar tissue remain as horrible mementos of his valor. Every movement is painful. Even walking means torture, especially when walking to the *new* schoolhouse means a journey of several miles each day.

But the game youngster, Glenn Cunningham by name grits his teeth and *makes* the walk. Soon he finds that it is less painful to run than to walk. Later on he makes

his regular trip to school and back by *running*.

And thus is made the greatest ruler this country has ever known—made by his sheer determination to face a handicap and overcome it.

At college he becomes a star athlete acquiring medal after medal and breaking record after record, climaxing it with the establishment of the American record for the mile. Then come the Olympic games the supreme test of athletic prowess, and just last month this same ex-cripple broke the Olympic record for 1500 meters.

What a triumph for courage! What a splendid lesson in fortitude! What a fine example to all others who have some distressing defect to combat!

By the strange irony of fate, though Glenn Cunningham *did* break the Olympic record just a few short paces ahead of him was another ex-cripple, Jack Lovelock, a gallant New Zealand medical student who only three years ago, had an operation upon his knee which specialists said would prevent him from ever running again!

Truly the "will-to-win" is the one which *will* win!

BETTER CARE FOR LESS MONEY

Dr. Matthew Levitas, newly elected State Department Surgeon of the Veterans of Foreign Wars, has a proposal to save the Veterans Administration \$582,540 a year on veterans hospitalization in New York and millions throughout the United States.

The Government, Dr. Levitas said in his home in Brooklyn, could save that sum and at the same time afford the veterans better medical attention if it would cease constructing new hospitals for general medical and

surgical cases and arrange to make use of private hospital facilities for veterans' cases.

The 500,000 hospital days veterans receive at Government expense in the New York area annually, he said, cost the Veterans Administration \$4.10 a day, excluding expenses for hospital construction.

"The same services could be contracted for with private hospitals at \$3 a day, which is the rate paid by the City of New York," Dr. Levitas declared.

FAMILY PERIODIC PARALYSIS

Use of Tissue Extract

S VERNON, M D, *Willimantic, Conn*

Family periodic paralysis occurs infrequently and its rarity makes the opportunity for the study of this disease so limited that very little can be learned about it. The condition was first described by Westphal and Oppenheim in 1885 reporting one case. Goldflam later pointed out its familial character. In 1901, Singer and Goodberg reported a case, another report was made the following year by Mitchell. A report of seventeen cases was published in 1905 by Holtzapple^{1,2,3} of York, Pa. Over two hundred cases of this disease have been described to date.

Holtzapple attributed this condition to spasm of the anterior spinal artery. He pointed out that ten of his seventeen cases also suffered from migraine. He also advanced the idea that defective nitrogenous elimination was a causative factor, and that autointoxication associated with constipation, emotional excitement, and fatigue contributed to the condition.

Although several factors are distinctly suggestive of some abnormality of muscle⁴ the fact that nerve changes must occur is undeniable. The transitory character of the paralytic condition presupposes a transitory pathologic change which vascular spasm is likely to cause. The disease is characterized by extensive flaccid motor paralysis with loss of reflex and electrical excitability without sensory or psychic disturbance, and with an interval of perfect health. The disturbance is periodic and the predisposition is hereditary although sporadic cases are found. Attacks begin at any age from two to thirty, but most frequently after fifteen years of age.

Case Report

H S, age thirty-four, was admitted to the hospital under the care of Dr R L Gilman at 1 00 A M, May 8, 1933, in a paralyzed condition. Weakness of arms and legs occurred upon awaking in the morning two days before admission. He went to work but stumbled and fell during the forenoon. He drove his car home himself. In the evening weakness of extremities increased. The next morning he was

unable to move any part of his body except his head, toes, and left knee. He was unable to raise secretions in the upper respiratory tract, but was perfectly rational, conscious, and without pain. He was brought to the hospital.

First attack of paralysis occurred at the age of sixteen, patient being unable to move on awaking in the morning. Attack lasted about three days and recurred every three months for about a year. Interval between attacks increased so that he had only six attacks during the past fifteen years. Last attack occurred two years ago with a duration of five days, no loss of consciousness, no convulsions. During the past two attacks, pain in his hips occurred as muscular power returned. Lately there have been abortive attacks of weakness of arms and legs which could be worked off by exercise.

Family history. Mother, age sixty-eight, living and well. Father died of heart disease, age forty-eight. Three sisters living and well. Two brothers died in accident, another of influenza. Five other siblings died during infancy or measles, pneumonia, and other causes. No history of attacks or paralysis elicited in any relatives. Patient's mother had left hemiplegia thirty-three years ago which was treated and disappeared in one year. Patient married eleven years, wife is living and well, no pregnancies.

Past history. Normal at birth, no convulsions during infancy or childhood, had measles and chicken pox, never suffered head injury. Was severely burned in lower extremities and hips at the age of twelve. Infection and sepsis developed and was hospitalized for eight months. Complete recovery took three years.

No history of drug addiction. Changes in occupation have not altered the attacks. Present occupation is that of dyer. Patient drinks occasionally but attacks have not followed alcoholic excess. No jaundice, dyspepsia, vomiting of blood or bloody stool. Has never had chronic cough, chest pain or palpitation. Has never had dysuria, polyuria, hematuria. No change of weight in recent years.

Physical examination shows a well-developed, well-nourished man who is unable to move, having difficulty with mucus in his throat but no pain. Ears normal, neck is not stiff, teeth are carious and coated, tonsils are congested, heart negative, abdomen

negative, pulse sixty, temperature 98.6, respirations eighteen, blood pressure 110/70. Scar from burns noted on both legs. Genitalia negative, abdominal reflexes absent, right knee jerk absent, left knee jerk present, no Babinski, no ankle clonus.

Flaccid paralysis is complete for both upper limbs. Slight movement is present in right leg and ability to flex right knee and left toes is present. No change in sensation of touch, pain, or temperature in any part of the body.

Patient experienced considerable relief after suction of mucus from throat. Bladder was catheterized. Nonprotein nitrogen of blood 60 mg. Blood test 5,110,000 red blood cells, hemoglobin ninety-six per cent, 12,400 white blood cells, polynuclear cells seventy-three per cent, lymphocytes twenty-six per cent, mononuclears one per cent, Wassermann negative. Urine showed a faint trace of albumin. During the stay in the hospital muscular power of limbs gradually increased. There was some pain in the involved areas during the course of improvement. The patient regained full use and control of his muscles and was discharged two days after admission.

Follow-up

The patient was seen at home on August 3, 1934. He was found lying in bed with all extremities paralyzed. Sensation was intact but no reflexes could be elicited from the lower extremities. He was having some difficulty with raising secretions from the respiratory tract. The heart sounds were irregular in rhythm. The veins of the extremities showed irregular fusiform dilatations along their course. Paralysis continued for almost forty-eight hours and then gradually wore off, with severe pain in the lower extremities as muscular power was returning.

Patient was again seen August 14 in the morning, complaining of a "numbness" in the muscles of the lower part of the body. He was completely unable to stand erect. The arms were extremely weak, especially the right. Reflexes in legs were spastic. Sensation was normal. Two cc of tissue extract were injected intramuscularly at 9:28 A. M. Right arm felt better three minutes afterward. At 9:34 A. M., the muscle strength of the quadriceps muscles distinctly improved since patient could raise himself from a crouching posture. At 9:56 A. M., 2 cc were again administered and the patient expressed his surprise and satisfaction at the change in function that occurred and stated that he had never experienced such rapid improvement during his previous attacks. At 11 A. M., the

patient reported that he felt better and that power in his feet had completely returned. At 3 P. M., he reported that he had had a nap and was then completely normal as far as muscular activity was concerned.

On the evening of September 4, patient was again seen in an attack. His temperature was normal. He complained at this time that he had "bad breath, and a bad taste in the mouth" right after the attack similar to the taste he had experienced during attacks of fever. He also stated that a very mild attack had occurred four days previously in the morning but he managed to work it off during the day.

No reflexes could be elicited in the right leg. Left leg was weak and spastic reflexes could be elicited. Two cc of tissue extract were administered in the left thigh at 8:45 P. M. At 8:54 P. M., sufficient function returned so that he could flex the left foot although not as much power was present in the right. At 9:02 P. M., two cc were given in the right thigh. At 10 P. M., patient was able to walk about the room without assistance. The next morning, patient went to work.

The drug used here is tissue extract of the pancreas and is known to be effective in angiospastic conditions. It has been studied by Wolffe⁵ and others who found that it produced a transitory decrease in arterial tension which was attributed to vascular dilatation. It is therefore used in angina for its effect on the coronary vessels. It has been established that this substance neutralizes the pressor action of epinephrin. Adrenalin⁶ is said to be contraindicated in this disease. It is believed that the favorable effects obtained from the use of the drug in this case results from relief of spasm of the anterior spinal artery, since transitory ischemia of the anterior horn cells could produce the condition. The attacks in which the drug was used were moderate but it is apparent that improvement occurred more rapidly than in the abortive attacks. The earmarks of intestinal intoxication (feter oris and constipation) coinciding with the attacks leads to speculation concerning the casual relationship of the former. For example, tyramine, a product of decomposition and known to be present in the intestine produces sympathomimetic stimulation less powerful and more persistent than epinephrin. Bassler has suggested the possibility of intestinal toxemia being an etiologic⁸

factor in the production of nerve disease. Since glycine has been found to be effective in muscle disorders, Schoenthal suggests that it be tried in such a case to combat the myopathic⁹ factor in this condition.

Comment

In a sporadic case of family periodic paralysis, intestinal intoxication appeared to coincide with the attack. Striking re-

lief followed in two of the attacks by the use of tissue extract, a drug which relieves vascular spasm. If similar results can be obtained in other cases it would support the premise that family periodic paralysis is due to spasm of the anterior spinal artery. It appears therefore, that the agent is worthy of further trial in attacks of this disease.

784 MAIN ST

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LITTLE THINGS ABOUT MANY THINGS

A news dispatch from Washington says that an entirely new food and drug bill will be introduced by Senator Copeland and Representative Chapman of Kentucky at the next session of Congress. Senator Copeland said that legislative counsel for the Senate and House are now drafting such a bill "entirely independent of the Department of Agriculture."

A busy physician, Dr. Ignazius Byrne, finds no time to lead the Greenpoint Chamber of Commerce, as president, in its civic programs to secure local improvements. Now that Greenpoint has its swimming pool, Dr. Byrne is continuing the chamber's efforts to secure a much needed high school for the McCarren Park section.

A newborn child in New Zealand can look forward, on an average, to five and a half more years of life than a child just born in the United States, according to the Statistical Bulletin of the Metropolitan Life Insurance Company.

The State Medical Society of Wisconsin has restored its annual dues to the prewar level of \$15.

Investigations reveal that Japan is exporting more than ninety-eight per cent of all foreign toothbrushes shipped here. Turned out by her coolie factory labor, these brushes are scaling tariff walls and selling at a wholesale price of around 2.28 cents each.

San Francisco has a Chinese hospital now in its twelfth year. It cost \$350,000,

contributed by the Chinese, and has a typical Chinese curving roof in blue, green, red, and yellow tile. It is, however, modern and up-to-date in every detail. Its ten doctors are all American Chinese, with prominent American consulting physicians. Two of the seven graduate nurses are American Chinese. The kitchen serves American or Chinese food, as preferred.

A Scotchman had been told by his doctor that he had a floating kidney. He was much disturbed by the diagnosis and went to the Minister of his Church with a request for the prayers of the congregation.

"I don't know," said the minister dubiously. "I'm afraid that at the mention of a floating kidney the congregation would laugh."

"I don't see why they would," replied the sufferer. "It was only last Sabbath you prayed for loose livers."

—*Royal Arcanum Bulletin*

Caller—"What's all that howling upstairs?"

Mrs. Boardem—"It's that faith-cure doctor who's got the toothache."

—*Illinois Medical Journal*

An outbreak of scarlet fever and sore throat in the village of Red Creek, Wayne County, was traced to a raw milk supply. The supply was pasteurized and the epidemic waned. Only one case terminated fatally.

"Is your insomnia any better?"

"A little bit. My foot went to sleep yesterday."—*Exchange*

ENDOCRINE STUDY OF HYPOGONADISM AND CRYPTORCHIDISM

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The endocrine consideration and treatment of cryptorchidism was greatly stimulated by Engle¹ in 1932 when he demonstrated that in monkeys with delayed puberty, descent of the testes may be experimentally produced by injection of the active principle of the anterior pituitary gland or of pregnancy urine.

The mechanism of testicular descent in the human, according to him, is as follows:

- 1 Hormone activity is an integral part of the pituitary-gonad relationship and depends upon the normal stimulative action of the gonadotropic hormone and the normal receptive condition of the gonads. The descent of the testes at birth is due in a large measure to gonad activators present in the blood of the mother and fetus during pregnancy and in the latter in early neonatal life. Cryptorchidism ensues if the testes do not react to the stimulus of the hormone of pregnancy or if the hormone level drops at too early a period before the testes are sufficiently differentiated to respond.

- 2 Mechanical factors

- (a) The gubernaculum testis affords directive and possibly tractor influence.
- (b) The increase in the size of the testes in the inguinal canal forces them down into the scrotum especially since normally the internal ring is closed when the testes enter the canal.

With these principles in mind, the etiological factors in cryptorchidism may be one or more of the following:

- 1 Hypopituitarism producing insufficient pituitary gonadotropic stimulation. The testicular function is normal.
- 2 Primary hypogonadism resulting in insufficient reaction to pituitary stimulation.
- 3 Primary hypothyroidism resulting in lack of primary tissue differentiation and lack of testicular response.

- 4 Mechanical factors causing arrest of the testes at any point in its descent.
- 5 Late normal descent without any endocrine or mechanical disturbance.

We have found the following diagnostic points valuable in the differentiation between the thyroid and pituitary types of cryptorchidism:

- 1 The primary hypothyroid type is found in childhood myxedema and hypothyroidism. If the onset occurs during the first year of life, there is a delay in the time of teething, walking, and talking, and in the appearance of carpal centers in the wrist. Other criteria are low metabolism, high cholesterol (above 200 mg per 100 c.c. of blood), normal specific dynamic action of proteins, dry skin and hair, small thin teeth, and constipation.

- 2 The hypopituitary type occurs in association with adiposogenital dystrophy, anterior pituitary deficiency of growth and pituitary infantilism. Cryptorchidism may be the only indication of pituitary-gonad deficiency irrespective of the size of the phallus. The laboratory findings in the pituitary deficiency group are high blood uric acid (above 35 mg per 100 c.c.), high blood chlorides (above 500 mg per 100 c.c.) and absent or low specific dynamic action of proteins. The basal metabolism may be increased, normal or decreased depending upon the functional activity of the thyrotropic hormone of the anterior pituitary gland or of the thyroid hormone itself.

Because of the lack of definite information in the literature as to the incidence of cryptorchidism and hypogonadism we reviewed the records of 519 boys who had been observed in two endocrine clinics. 398 presented some endocrine disturbance and 121 did not. The following findings are interesting as they are probably the first statistics of these conditions based on a large series (Table I).

Hypogonadism and cryptorchidism occur almost twice as frequently in the endocrine group as in the nonendocrine in the pro-

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portion of 87.5 per cent as against 33.9 per cent.

The incidence in the individual endocrine disorders in the order of greatest frequency is as follows: eunuchoidism, adiposogenital dystrophy, anterior pituitary deficiency of growth, mongolianism, hypothyroidism, and nonendocrine conditions.

Cryptorchidism occurs in the following incidence: eunuchoidism, adiposogenital dystrophy and hypothyroidism in practically the same proportion, mongolianism, nonendocrine conditions, and anterior pituitary deficiency of growth.

Hypogonadism without cryptorchidism is most frequently encountered in the following sequence: anterior pituitary deficiency, adiposogenital dystrophy, eunuchoidism, mongolianism, hypothyroidism, and nonendocrine conditions.

Scope and Material of present Study

The present communication reports the findings and results of study of hypogonadism and cryptorchidism in boys ranging in age from two to fourteen years.

There are thirty-eight cases of cryptorchidism associated with the following conditions: adiposogenital dystrophy, twenty; eunuchoidism, two; hypothyroidism, seven; anterior pituitary deficiency, one; mongolianism, one; mechanical causes, two; it occurred in otherwise normal boys in five instances. Bilateral involvement was present in twenty-three cases and unilateral in fifteen. The location of the testes was as follows: in abdomen, fourteen of bilateral, nine of unilateral type, in the canal, seven bilateral, six unilateral, one in abdomen, and one in canal in two cases of bilateral cryptorchidism. Testes of the wandering type or which could be forced into the scrotum are not

considered as true cryptorchidism and are not included. Hypoplastic genitalia were present in thirty cases out of thirty-eight.

There are thirty-six cases of hypogonadism with descended testes. The latter were practically all smaller than the normal and the scrotum varied from a small pouch with a median raphe to one of fairly normal size. The three components of the external genitalia generally showed the same tendency to underdevelopment but in many instances the scrotum was normal and the testes hypoplastic, and vice versa. Of the thirty-six cases, twenty-five occurred with adiposogenital dystrophy, seven with hypothyroidism, three with primary hypogonadism, and one with anterior pituitary deficiency of growth.

All of the patients were studied in accordance with the methods and procedure described in a previous communication.² A resume of the chemical and laboratory findings are given in Table II and indicates that the underlying endocrine disturbance in both hypogonadism and cryptorchidism is a combination of hypothyroidism and hypopituitarism.

Treatment

The treatment of cryptorchidism and hypogonadism in this series is based on the belief that both conditions are associated with deficiency of the thyroid and pituitary glands. This is confirmed by the laboratory and chemical findings in this series and by the beneficial results obtained by the empirical use for many years of thyroid extract in all hypopituitary states. The plan of treatment is as follows:

TABLE I—HYPOGONADISM AND CRYPTORCHIDISM IN ENDOCRINE AND NON-ENDOCRINE CONDITIONS

Condition	Total Number	Normal Genitalia	Hypogonadism (Testes Descended)	Cryptorchidism	
				Bilateral	Unilateral
ENDOCRINE					
A.G.D.	306	21 (6.8%)	184 (60.1%)	53 (17.4%)	48 (15.7%)
Hypothyroidism	28	13 (46.5%)	6 (21.5%)	4 (14.2%)	5 (17.8%)
Hyperthyroidism	1	1 (100%)	0 (0%)	0 (0%)	0 (0%)
Anterior Pituitary Deficiency	20	2 (10%)	15 (75%)	2 (10%)	1 (5%)
Eunuchoidism	7	0 (0%)	3 (42.9%)	3 (42.9%)	1 (14.2%)
Mongolianism	36	13 (36.1%)	15 (41.7%)	4 (11.1%)	4 (11.1%)
Total	398	50 (12.5%)	223 (56%)	66 (16.6%)	59 (14.9%)
NON-ENDOCRINE					
	121	80 (66.1%)	22 (18.2%)	10 (8.3%)	9 (7.4%)
		Normal Genitalia	Hypogonadism and Cryptorchidism		
Endocrine	398	12.5%	87.5%		
Non-endocrine	121	66.1%	33.9%		

1 Oral administration of thyroid and anterior gland in the following dosage

	1st Month	2nd	3rd	4th
Desiccated thyroid substance	gr $\frac{3}{8}$	gr $\frac{1}{4}$	gr $\frac{1}{2}$	gr 1
Desiccated anterior pituitary substance	gr II	gr III	gr IV	gr V

This combination is increased every month as indicated and is given three times a day for the first three weeks of the month and discontinued for the fourth week. The last dose is continued with the same alternation.

2 Hypodermic injection of anterior pituitary extract, 1 c.c. twice a week. This is given in every case of hypogonadism for the entire course of treatment and for the first month or two in every case of cryptorchidism. In those cases where beneficial results are observed in the latter, the injections are continued for a longer period.

3 In all cases of cryptorchidism and in protracted cases of hypogonadism, anterior pituitary extract is changed as above to anterior pituitary-like extract (of pregnancy urine), one c.c. two to three times a week. In a few instances a combination of one c.c. each of anterior pituitary extract and pregnancy urine extract is given two to three times a week.

4 In all cases of obesity, a diet is prescribed which is low in calories (900 to 1000 a day) high in proteins, and low in fat and carbohydrates. Salt and water intake are restricted.

In six cases the oral administration of thyroid and anterior pituitary extracts was the only method used. In ten cases, hypodermic injections of anterior pituitary extract were given in addition and in twenty-two cases pregnancy urine extract was administered in addition to oral medication.

Results

Cryptorchidism The findings in Table III indicate that beneficial results in cryptorchidism may be obtained by any of the three methods used in this series. However, the combined use of thyroid and anterior pituitary extracts by mouth and extract of pregnancy urine by hypodermic injection is much more beneficial than that of thyroid and pituitary extracts alone or in conjunction with hypodermic injection of anterior pituitary extract. Complete descent was obtained in the three methods as follows. *First*, thirty-three per cent, *second*, fifty per cent, and *third* fifty-seven per cent. Results were noted with the first method in 7.3 months, with the second in six months, and the third in 3.7 months, on the average.

There were nine cases of failure in the thirty-eight cases of cryptorchidism, two were treated by the first method and seven by the third method. The types were as follows: adiposogenital dystrophy, five, mechanical, two, and cryptorchidism alone, two. In the obese group, two (2 and 12 years of age) were treated by oral administration and three (2, 5, and 8 years of age) by the addition of pregnant urine extract. One of the boys with the mechanical form is twelve years of age and had been operated upon two years previously for left inguinal hernia and left cryptorchidism. The operation for the cryptorchidism was unsuccessful. He is still under treatment and has not shown any advance of the testes in the canal after thirty injections. The second patient in this class is eight years of age and has also a left undescended testis with inguinal hernia. There has been a perceptible drop from the upper to the lower levels of the canal after one year's treatment.

An analysis of Table IV indicates that the treatment of cryptorchidism by any of the methods used in this series may be effectual at any age between two and fourteen years. Treatment is much more effective after five years of age than prior to it. There is an increasing tendency to better results with an increase in age at the onset of treatment.

There is a difference of opinion as to the functional capability of the undescended abdominal testicle. Some claim that the testes cannot develop nor function normally except in the scrotum and

TABLE II—LABORATORY DATA.

	Hypogonadism (38 cases)	Cryptorchidism (33 cases)
METABOLISM		
B. M. R. below minus 10	60% of cases	61% of cases
S. D. A. of 10 or below	80% of cases	86% of cases
Average S. D. A.	5.2	3.8
BLOOD CHEMISTRY		
Cholesterol	185 mg /100 c.c.	206 mg /100 c.c.
Chlorides	493 mg /100 c.c.	499 mg /100 c.c.
Uric acid	4.0 mg /100 c.c.	3.6 mg /100 c.c.
Glucose	89 mg /100 c.c.	92 mg /100 c.c.
Urea N	13.6 mg /100 c.c.	12.5 mg /100 c.c.
Creatinine	1.2 mg /100 c.c.	1.3 mg /100 c.c.
BONE DEVELOPMENT		
Normal	93.6% of cases	78% of cases
Retarded	6.4% of cases	22% of cases

that the germinal epithelia undergo degeneration elsewhere. The exocrine function of spermatogenesis and reproduction is diminished or even lost but the endocrine element is not disturbed. Against this is the statement of others that the undescended testicle before puberty is indistinguishable microscopically and macroscopically from the normal. In this series, descent of the testes was generally followed by an increase in size. In no

instance was there any sign of atrophy.

Spontaneous descent of the testes may occur in a certain percentage of uncomplicated cases between the ages of ten and fifteen years. Drake³ found in his series that there was a spontaneous descent in the majority of instances of unilateral cryptorchidism by the fourteenth year. It is not desirable, however, to postpone treatment until puberty in the hope that spontaneous descent will occur. No boy

TABLE III—RESULTS OF TREATMENT OF CRYPTORCHIDISM BY VARIOUS METHODS

Condition Prior to Treatment	Condition After Treatment				Total
	Complete descent	Partial descent	Unilateral descent in bilateral cryptorchidism	No effect	
METHOD NO. I—Thyroid and anterior pituitary extracts by mouth					
Bilateral cryptorchidism	0	1	1	1	3
Unilateral cryptorchidism	2	0	0	1	3
Total	2 (33%)	1	1	2 (33%)	6
METHOD NO. II—Thyroid and anterior pituitary extracts by mouth and anterior pituitary extract by hypodermic injection					
Bilateral cryptorchidism	2	0	2	0	4
Unilateral cryptorchidism	0	0	0	0	0
Total	2 (50%)	0	2 (50%)	0	4
METHOD NO. III—Thyroid and anterior pituitary extracts by mouth and anterior pituitary like (pregnant urine) extracts by hypodermic injection					
Bilateral cryptorchidism	9	3	2	2	16
Unilateral cryptorchidism	7	0	0	5	12
Total	16 (57%)	3 (18%)	2	7 (25%)	28
ALL METHODS	20 (53%)	4 (10%)	5 (13%)	9 (24%)	38
Average Length of Time of Treatment to Obtain Results. Method No. I 7.33 months—Method No. II 6.0 months—Method No. III 3.7 months					

TABLE IV—RESULTS OF TREATMENT WITH REFERENCE TO AGE AT ONSET OF TREATMENT

Age	Complete descent	Partial descent	Unilateral descent in bilateral cryptorchidism	None	Total
METHOD NO. I					
1 to 2 years	1	1 (25%)	0	1 (25%)	3
5	0	0	1	0	1
10	1	0 (50%)	0	0 (50%)	1
12	0	0	0	1	1
Total	2 (33%)	1 (33%)	1 (33%)	2 (33%)	6
METHOD NO. II					
6 years	0	0 (0%)	1 (100%)	0	1
8	0	0	1	0	1
10	1	0 (100%)	0	0	1
11	1	0 (50%)	0 (50%)	0	1
Total	2 (50%)	0	2 (50%)	0	4
METHOD NO. III					
2 years	1 (50%)	0 (0%)	0 (0%)	1 (50%)	2
5	2	0	0	2	4
6	0	1	1	1	3
7	1 (43%)	0 (28%)	0 (28%)	0 (28%)	1
8	2	0	0	1	3
9	1	0	0	0	1
10	6 (67%)	1 (20%)	1 (20%)	0 (13%)	8
11	0	1	0	1	2
12 to 14	3	0	0	1	4
Total	16 (57%)	3 (18%)	2 (18%)	7 (25%)	28
ALL METHODS					
Up to 5 years	4 (40%)	1 (10%)	1 (10%)	4 (40%)	10
Above 5 years	16 (57%)	3 (11%)	4 (14%)	5 (18%)	28

should be subjected to an operation for undescended testicle until he has been given the benefit of organotherapy for at least six months. If bilateral cryptorchidism is still present at the age of fourteen years after a trial of endocrine therapy, then operation should be performed. The results of surgery are not very gratifying as about fifty per cent of the cases reported in the literature have been unsuccessful.⁴

Hypogonadism. Cases of hypogonadism with descended testes, especially when associated with adiposogenital dystrophy and hypothyroidism, responded in the majority of instances to oral administration of thyroid and anterior pituitary extracts and hypodermic injection of anterior pituitary extract. Extract of pregnant urine was added only in stubborn cases. Treatment in this group resulted in an increase in size of the external genitalia in twenty-eight instances and no effect in eight. The failures included five cases of adiposogenital dystrophy, two of hypothyroidism, and one of eunuchoidism. The results in each component part were not uniform, i.e. enlargement of the phallus was not always accompanied by a corresponding increase in the size of the testes or scrotum, or vice versa.

In the second group (hypogonadism with cryptorchidism) the effects on each component were also not parallel. In the thirty-eight cases in this group, thirty showed underdeveloped genitalia. The response to treatment was as follows in twenty-two where a complete or partial descent of the testes was obtained, fifteen showed improvement in the size of the phallus and seven did not. In seven instances of failure in cryptorchidism, an increase in the size of the phallus resulted in four and no effect in three instances.

The administration of anterior pituitary extract was followed in several instances by one or more of these untoward symptoms: urticaria, angioneurotic edema, pruritis, abdominal cramps, and loose bowel movements. Anterior pituitary-like extracts produced rashes and itching but no gastrointestinal symptoms. Acute congestion of the testes occurred in two instances in boys with adiposogenital dystrophy and descended testes after the injection of six and ten c.c. respectively, administered in doses of one c.c. twice a week. We did not observe any symptoms

of prostatic involvement or of glycosuria.

The extra-genital results will be discussed in detail in another communication.⁵ We may state briefly here that there was a reduction of twenty-five per cent in the overweight on a basis of comparison with Baldwin's standards of weight to height and age. There was a normal increase in stature. The basal metabolic rate and specific dynamic action were increased in the majority of instances. While there was a relationship between the general and local genital improvement, this was not along parallel mathematical lines. Improvement in the basal metabolic rate, specific dynamic action, obesity, and the general endocrine condition was generally but not always accompanied by the same degree of improvement in the hypogonadism or cryptorchidism, or vice versa.

Summary and Conclusion

Review of the records of 521 boys with endocrine or non-endocrine conditions shows that hypogonadism and cryptorchidism occur almost twice as frequently in the endocrine as in the non-endocrine group. Every child with either one of these conditions should be examined from an endocrine viewpoint. Cryptorchidism may be due to deficiency of the pituitary, thyroid or testicular glands or to non-endocrine conditions such as mechanical factors or late normal descent.

Studies on thirty-eight boys with cryptorchidism and thirty-six with hypogonadism with descended testes show on the average a hypopituitary deficiency as manifested by low basal metabolic rate, low specific dynamic action of proteins and high blood values of cholesterol, chlorides, and uric acid.

The treatment of cryptorchidism in this series is based upon the assumption that it is a symptom in the majority of instances of a disturbed hypopituitary-gonad relationship and not a clinical entity. Three methods are used:

- 1 Oral administration of thyroid and anterior pituitary extracts in increasing dosage,
- 2 Oral administration of thyroid and anterior pituitary extracts and hypodermic injection of anterior pituitary extract,
- 3 Oral administration of thyroid and anterior pituitary extracts and hypodermic injection of anterior pituitary-like (pregnant urine) extract.

Beneficial results may be obtained in cryptorchidism by any of these methods. The combined administration of anterior pituitary and thyroid extracts and hypodermic injection of pregnant urine extract is much more beneficial than the other two methods. Complete descent of the testes was obtained in the three methods as follows: *First*, thirty-three per cent, *second*, fifty per cent, *third*, fifty-seven per cent. The average length of time was in the first method, 7.3 months, in the second, six months, and in the third, 3.7 months.

We have found that the treatment of cryptorchidism by any of the methods used may be effectual at any age between two and fourteen years, but is more effective after five years. No boy should be subjected to an operation for undescended testicles until he has been given the benefit of organotherapy for at least six months.

Hypogonadism, especially when as-

sociated with adiposogenital dystrophy and hypothyroidism, responds in the majority of instances to oral administration of thyroid and anterior pituitary extracts and hypodermic injections of anterior pituitary extract. Extract of pregnant urine is necessary only in the stubborn and protracted cases.

Improvement in the basal metabolic rate, specific dynamic action, general endocrine condition, and obesity is generally but not always accompanied by the same degree of improvement in the hypogonadism and cryptorchidism. The effects on the phallus, scrotum, and testes are not parallel. Untoward effects may result from the use of either anterior pituitary or anterior pituitary-like extracts.

465 OCEAN AVE

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Discussion

DR SIMON A. BEISLER, *New York City*—The subject presented by Dr. Gordon is of interest to the practicing physician, pediatrician, endocrinologist, surgeon, and urologist. My discussion will be limited to the surgical and urological aspects tempered mainly to practical experiences and observations noted in similar cases treated in the Squier Urological Clinic.

Most observers are in agreement that normal testicular development including spermatogenesis does not occur after puberty if the testicle is outside the scrotum. At this point the factor of spontaneous descent should be taken up. It is granted that at the age of puberty or shortly thereafter a fairly large number of previously undescended testes descend into the scrotum and remain there. This occurs more frequently in the unilateral, but also occurs in bilateral undescended testes. Drake claims that this occurs in the greater number of cases, however, statistics compiled by the Army during the draft showed three in one thousand recruits with undescended testes. In practice every urologist encounters cases from both the sterility and impotency standpoint that give a history of bilateral descent after fourteen to sixteen years of age who present considerably undeveloped testes without associated endocrine pathology and for whom to date nothing can definitely be accomplished. Likewise many of the cases giving a history of descent of a previously unilateral undescended testes after puberty shows this

testicle to be undeveloped. From this standpoint it is advisable to attempt by some means to get the undescended testicle into the scrotum sometime before puberty. This raises the question as to what single or combination of procedures will best accomplish complete descent of abnormally located testes and at what age they are best carried out.

Dr. Gordon has pointed out the relative incidence of cryptorchidism and hypogonadism in a large series. We all agree they must be divided into an endocrine and non-endocrine group. He has divided his therapy into four plans of treatment. Groups 1 and 2 were treated by thyroid extract and either desiccated anterior pituitary substance by mouth or anterior pituitary extract by hypodermic, and while I am not in a position to discuss this phase of treatment his results are better than those obtained by workers using somewhat similar methods of treatment. Many claim oral administration of the anterior pituitary extract by mouth is of no value. Group 3 was treated by substituting anterior pituitary-like extract (of pregnancy urine) one cc two to three times a week with or without the addition of hypodermic injections of anterior pituitary extract. The anterior pituitary secretes two gonadotropic hormones. The one is normally found in pregnancy urine extracts and stimulates largely the connective tissue (interstitial cells) but does have effect on the seminiferous epithelium, the other is present in

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extracts of castrates and stimulates mainly the semineferous epithelium. Experimental evidence points out that the anterior pituitary secretes at least six hormones, and with this in mind as well as the fact that the present available products are usually impure physiologically, we are more than likely using admixtures of these various hormones. I have particularly in mind the thyrotropic hormone which definitely stimulates the thyroid gland, an effect it is said to lose in protracted and long treated cases.

In presenting the following similar cases, treated either as in or outdoor patients at the Squier Urological clinic, I have selected a number of earlier cases which have been followed from one to three years after cessation of all treatment. Follutein was the preparation used in our cases.

CASE 1 Age eight. Right testicle at external inguinal ring, left not palpable with an associated perineal hypospadias. The patient received one c.c. (250 rat units) twice a week for three months at which time the right testicle was in the scrotum. The left at the external inguinal ring. Treatments were continued at longer intervals for thirteen months with no change.

CASE 2 Age fifteen. Right, undescended, not felt, left in scrotum. Sixteen one c.c. intramuscular injections of Follutein three times a week. The right testicle now was at the external inguinal ring and orchidopexy was performed with an excellent end result. An associated indirect inguinal hernia was repaired, cord was not transplanted.

CASE 3 Age nine. Bilateral undescended. Right in the inguinal canal, left at internal inguinal ring. Patient received eighteen injections of one c.c. of Follutein twice weekly. Orchidopexy performed with a good end result on the right side, a poor end result on the left side. The left testicle lying at the upper end of the scrotum. Postoperative treatments by Follutein had no beneficial effect.

CASE 4 Age thirteen. Right testicle at external inguinal ring, left at internal inguinal ring. Patient received fifteen injections of Follutein one c.c. at the end of which both testes were at the external inguinal ring. Orchidopexy bilateral yielded good result.

CASE 5 Age thirteen. Left testicle in inguinal canal with associated hernia. Right in scrotum. Twelve injections of Follutein one c.c. three times a week showed testicle at abdomino-scrotal junction. Repair of hernia and orchidopexy gave good end result.

CASE 6 Age fourteen. Right undescended at internal inguinal ring, left in scrotum. Twelve one c.c. injections of Follutein given and testicle was then at the external inguinal ring. Orchidopexy with good result.

CASE 7 Age eleven. Right undescended not felt. Eighteen one c.c. doses of Follutein were given three times a week and testicle could be palpated at the external inguinal ring. Orchidopexy performed after which testicle occupied the upper scrotum. Postoperative Follutein caused no improvement. Considered poor result.

CASE 8. Age eight. Left testicle said to have been scrotal at birth but gradually receded and was at internal inguinal ring. Follutein given in one c.c. dosage three times a week for four weeks and testicle found at external inguinal. Orchidopexy performed. Testicle occupied upper scrotal region. End result considered poor. Postoperative Follutein had no beneficial effect.

CASE 9 Age fifteen. Right undescended testicle in inguinal canal with associated hernia. Six one c.c. doses of Follutein twice a week, at which time testicle was just below external inguinal ring. Orchidopexy and hernia repair without cord transplantation with excellent result.

CASES 10, 11, 12, 13, 14—Ages 16, 17, 16, 16. 20—With unilateral undescended testicles gave no response to Follutein therapy.

The above fourteen cases represented the non-endocrine group. The best results were obtained in the group from eleven to fifteen years of age. Five cases sixteen years of age to twenty gave no response to hormonal therapy.

In the endocrine group four bilateral and two unilateral undescended testes were encountered under twelve years of age and all gave and maintained complete descent on Follutein therapy with increase in size of the testicles, but as soon as the preparation was administered only once in two to four weeks they receded to their former small size but remained in the scrotum.

Work in this field has been continued in a much larger group of cases at the Squier Clinic. We definitely feel it advisable to try hormonal therapy on cases of cryptorchidism that at present hormonal therapy only will be necessary in the endocrine group particularly in the so-called Fröhlich syndrome group. That in the non-endocrine group a combination of variable doses of hormonal therapy and surgery will be required and that this should be carried out before puberty. At present I would hesitate to say at what age this is best carried out. Later after following these cases we will most likely decide this question.

I would like to recall to your attention that before hormonal therapy was introduced good results were obtained in the non-endocrine group by simple orchidopexy where possible and in those where this procedure could not be done, the Torek operation was found satisfactory. In 1927 Meyer reported one hundred per cent satisfactory results in sixty-four cases. Recently Burdick and Coley reviewed one hundred and thirty-seven cases from the Hospital for the Ruptured and Crippled and Harris in 1933 reported twenty-seven cases all with satisfactory end results. Will the Torek operation be replaced by a combination of hormonal therapy and simple orchidopexy?

Beneficial results may be obtained in cryptorchidism by any of these methods. The combined administration of anterior pituitary and thyroid extracts and hypodermic injection of pregnant urine extract is much more beneficial than the other two methods. Complete descent of the testes was obtained in the three methods as follows: *First*, thirty-three per cent, *second*, fifty per cent, *third*, fifty-seven per cent. The average length of time was in the first method, 7.3 months, in the second, six months, and in the third, 3.7 months.

We have found that the treatment of cryptorchidism by any of the methods used may be effectual at any age between two and fourteen years, but is more effective after five years. No boy should be subjected to an operation for undescended testicles until he has been given the benefit of organotherapy for at least six months.

Hypogonadism, especially when as-

sociated with adiposogenital dystrophy and hypothyroidism, responds in the majority of instances to oral administration of thyroid and anterior pituitary extracts and hypodermic injections of anterior pituitary extract. Extract of pregnant urine is necessary only in the stubborn and protracted cases.

Improvement in the basal metabolic rate, specific dynamic action, general endocrine condition, and obesity is generally but not always accompanied by the same degree of improvement in the hypogonadism and cryptorchidism. The effects on the phallus, scrotum, and testes are not parallel. Untoward effects may result from the use of either anterior pituitary or anterior pituitary-like extracts.

465 OCEAN AVE

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Discussion

DR SIMON A. BEISLER, *New York City*—The subject presented by Dr. Gordon is of interest to the practicing physician, pediatrician, endocrinologist, surgeon, and urologist. My discussion will be limited to the surgical and urological aspects tempered mainly to practical experiences and observations noted in similar cases treated in the Squier Urological Clinic.

Most observers are in agreement that normal testicular development including spermatogenesis does not occur after puberty if the testicle is outside the scrotum. At this point the factor of spontaneous descent should be taken up. It is granted that at the age of puberty or shortly thereafter a fairly large number of previously undescended testes descend into the scrotum and remain there. This occurs more frequently in the unilateral, but also occurs in bilateral undescended testes. Drake claims that this occurs in the greater number of cases, however, statistics compiled by the Army during the draft showed three in one thousand recruits with undescended testes. In practice every urologist encounters cases from both the sterility and impotency standpoint that give a history of bilateral descent after fourteen to sixteen years of age who present considerably undeveloped testes without associated endocrine pathology and for whom to date nothing can definitely be accomplished. Likewise many of the cases giving a history of descent of a previously unilateral undescended testes after puberty shows this

testicle to be undeveloped. From this standpoint it is advisable to attempt by some means to get the undescended testicle into the scrotum sometime before puberty. This raises the question as to what single or combination of procedures will best accomplish complete descent of abnormally located testes and at what age they are best carried out.

Dr. Gordon has pointed out the relative incidence of cryptorchidism and hypogonadism in a large series. We all agree they must be divided into an endocrine and non-endocrine group. He has divided his therapy into four plans of treatment. Groups 1 and 2 were treated by thyroid extract and either desiccated anterior pituitary substance by mouth or anterior pituitary extract by hypodermic, and while I am not in a position to discuss this phase of treatment his results are better than those obtained by workers using somewhat similar methods of treatment. Many claim oral administration of the anterior pituitary extract by mouth is of no value. Group 3 was treated by substituting anterior pituitary-like extract (of pregnancy urine) one cc. two to three times a week with or without the addition of hypodermic injections of anterior pituitary extract. The anterior pituitary secretes two gonadotropic hormones. The one is normally found in pregnancy urine extracts and stimulates largely the connective tissue (interstitial cells) but does have effect on the seminiferous epithelium, the other is present in

extracts of castrates and stimulates mainly the seminiferous epithelium. Experimental evidence points out that the anterior pituitary secretes at least six hormones, and with this in mind as well as the fact that the present available products are usually impure physiologically, we are more than likely using admixtures of these various hormones. I have particularly in mind the thyrotropic hormone which definitely stimulates the thyroid gland, an effect it is said to lose in protracted and long treated cases.

In presenting the following similar cases, treated either as in or outdoor patients at the Squier Urological clinic, I have selected a number of earlier cases which have been followed from one to three years after cessation of all treatment. Follutein was the preparation used in our cases.

CASE 1 Age eight. Right testicle at external inguinal ring, left not palpable with an associated perineal hypospadias. The patient received one c.c. (250 rat units) twice a week for three months at which time the right testicle was in the scrotum, the left at the external inguinal ring. Treatments were continued at longer intervals for thirteen months with no change.

CASE 2 Age fifteen. Right, undescended, not felt, left in scrotum. Sixteen one c.c. intramuscular injections of Follutein three times a week. The right testicle now was at the external inguinal ring and orchidopexy was performed with an excellent end result. An associated indirect inguinal hernia was repaired, cord was not transplanted.

CASE 3 Age nine. Bilateral undescended. Right in the inguinal canal, left at internal inguinal ring. Patient received eighteen injections of one c.c. of Follutein twice weekly. Orchidopexy performed with a good end result on the right side, a poor end result on the left side, the left testicle lying at the upper end of the scrotum. Postoperative treatments by Follutein had no beneficial effect.

CASE 4 Age thirteen. Right testicle at external inguinal ring, left at internal inguinal ring. Patient received fifteen injections of Follutein one c.c. at the end of which both testes were at the external inguinal ring. Orchidopexy bilateral yielded good result.

CASE 5 Age thirteen. Left testicle in inguinal canal with associated hernia. Right in scrotum. Twelve injections of Follutein one c.c. three times a week showed testicle at abdomino-scrotal junction. Repair of hernia and orchidopexy gave good end result.

CASE 6 Age fourteen. Right undescended at internal inguinal ring, left in scrotum. Twelve one c.c. injections of Follutein were given and testicle was then at the external inguinal ring. Orchidopexy with good result.

CASE 7 Age eleven. Right undescended not felt. Eighteen one c.c. doses of Follutein were given three times a week and testicle could be palpated at the external inguinal ring. Orchidopexy performed after which testicle occupied the upper scrotum. Postoperative Follutein caused no improvement. Considered poor result.

CASE 8 Age eight. Left testicle said to have been scrotal at birth but gradually receded and was at internal inguinal ring. Follutein given in one c.c. dosage three times a week for four weeks and testicle found at external inguinal ring. Orchidopexy performed. Testicle occupied upper scrotal region. End result considered poor. Postoperative Follutein had no beneficial effect.

CASE 9 Age fifteen. Right undescended testicle in inguinal canal with associated hernia. Six one c.c. doses of Follutein twice a week, at which time testicle was just below external inguinal ring. Orchidopexy and hernia repair without cord transplantation with excellent result.

CASES 10, 11, 12, 13, 14—Ages 16, 17, 16, 16, 20—With unilateral undescended testicles gave no response to Follutein therapy.

The above fourteen cases represented the non-endocrine group. The best results were obtained in the group from eleven to fifteen years of age. Five cases sixteen years of age to twenty gave no response to hormonal therapy.

In the endocrine group four bilateral and two unilateral undescended testes were encountered under twelve years of age and all gave and maintained complete descent on Follutein therapy with increase in size of the testicles, but as soon as the preparation was administered only once in two to four weeks, they receded to their former small size but remained in the scrotum.

Work in this field has been continued in a much larger group of cases at the Squier Clinic. We definitely feel it advisable to try hormonal therapy on cases of cryptorchidism that at present hormonal therapy only will be necessary in the endocrine group particularly in the so-called Fröhlich syndrome group. That in the non-endocrine group a combination of variable doses of hormonal therapy and surgery will be required and that this should be carried out before puberty. At present I would hesitate to say at what age this is best carried out. Later, after following these cases we will most likely decide this question.

I would like to recall to your attention that before hormonal therapy was introduced good results were obtained in the non-endocrine group by simple orchidopexy where possible, and in those, where this procedure could not be done, the Torek operation was found satisfactory. In 1927 Meyer reported one hundred per cent satisfactory results in sixty-four cases. Recently Burdick and Coley reviewed one hundred and thirty-seven cases from the Hospital for the Ruptured and Crippled and Harris in 1933 reported twenty-seven cases all with satisfactory end results. Will the Torek operation be replaced by a combination of hormonal therapy and simple orchidopexy?

ALLERGIC MANIFESTATIONS TO COWS' MILK

CHARLES GILMORE KERLEY, M D, *New York City*

While allergic reactions to cows' milk are most pronounced in the infant and young child, no age is exempt

Bret Ratner¹ divides human milk reactors into two main groups, the inherited and the acquired with emphasis on the acquired type

My clinical observation agrees with Ratner in the main but I believe that the matter of inheritance plays fundamentally a greater role than is the evident conclusion of Ratner

Sensitization to cows' milk takes place in two ways, antenatal in utero and postnatal through the gastrointestinal tract. Congenital, prenatal passive sensitization has been demonstrated by Rosenau and Anderson,² Wells,³ and others. Ratner⁴ has shown that the guinea pig fetus may be actively sensitized in utero, and has also demonstrated that active sensitization may result in the human infant by the passage of native milk proteins (lactalbumin and lactoglobulin) from the pregnant woman's blood into that of the fetal circulation. This offers an explanation for those cases of infants reacting violently when given milk for the first time. In other words they have been sensitized before birth and the apparently initial contact with milk is in reality a secondary one and the reaction is therefore allergic in nature.

Many more cases of allergic reaction to milk are seen in the young than in the adult and the reaction may be of a much greater intensity. This may be explained in part through the establishment of immunity in the adult by the processes of immunization resulting from habitual ingestion throughout the years.

In a vast number of milk reacting infants and children there is the history of milk incapacity in the parents. Milk intolerance in the adult frequently demonstrates itself in quite ordinary types of illness such as migraine, chronic colitis, habitually coated tongue and offensive breath, frequent headaches, constipation, periodic gastrointestinal crisis, chronic eczema.

I look upon allergy to milk as a familial disorder, a condition of systemic inheri-

ority, and transmissible. The wide variety in combination with the allergic manifestations can be explained through a physiologic deficiency, a pre-allergic state and in all probability of suprarenal gland origin.

Many instances could be given in which milk intolerance has been present in three or four generations among my patients.

A young woman who could not tolerate cows' milk gave birth to twins, one was allergic to cows' milk, made acutely ill by its use and was breast-fed successfully, the other was allergic to breast milk and had to be brought up on the bottle, both lived to grow up normal adults.

Four generations of milk reactors in one family occurred under my observation, a grandmother, daughter, granddaughter and great grandson.

A twenty-five year old mother, a milk reactor, first baby six months old thriving on the breast, mother's milk insufficient. Mother was advised to drink cows' milk to increase her own supply but she objected, claiming it disagreed and it had always made her more or less uncomfortable and ill. I insisted that she make an attempt. This was carried out and it was found that she could tolerate one pint a day without discomfort—not so with the baby, she developed eczema of a fairly urgent type, the mother discontinued cows' milk and the eczema cleared up. Evaporated milk was given to supplement the mother's supply, this was taken satisfactorily without skin manifestations. A further attempt was made about one month later at my suggestion for the mother again to attempt the drinking of cows' milk, simply a try-out, I was anxious to see what would happen, again the eczema appeared on the baby's cheeks, this child grew up to be a fine young woman developed hay fever at the age of fourteen years, vaccines successfully used at the age of twenty years, married at twenty-two years, promptly had twins also under my care, both reacted actively to cows' raw milk and both thrived on evaporated milk cooked one hour with starch. It is our practice in active reactors to boil the evaporated milk for one to two hours to bring about a greater desensitization.

The hypersensitiveness in the young to cows' milk has in my experience most frequently occurred in those in whom there

was a family history of milk intolerance as mentioned above. Thus hypersensitivity is shown in the most pronounced fashion through the nervous system and to a lesser degree in other systemic reactions. The many hundreds of children who have come under my observation showing conclusively a milk allergy are divided into three main groups.

Group 1—Shock through ingestion. A breast-fed five months old baby was brought to me because of an inability to take cows milk, the mother stated that the breast milk was failing, that she attempted cows milk formula and the baby was made violently ill. I discounted the mother's story and against her remonstrances placed a few drops of milk, perhaps eight or ten, on the baby's tongue. In a few moments the child passed into a condition of urgent shock, extreme pallor, shallow respirations, unconscious, heart sounds barely discernible, under urgent stimulation the child slowly came back to normal. The mother's milk largely failing, goats milk was substituted without any inconvenience to the child and he thrived satisfactorily.

A healthy normal ten months old breast-fed infant had been given small amounts of a fresh cows milk formula by the family physician to supplement the inadequate supply of breast milk, the child invariably refused and the small amount forced was immediately rejected. Again the physician directed that the mother discontinue nursing and give a cows milk formula. Two ounces was taken and retained, and in a short time the child developed alarming shock, pallor and was pulseless. The extremities were cold and the child could not be aroused, temperature was sub-normal. It was at this time that I came on the case with my associate, Dr. Gaylord Graves. One of us was in constant attendance for seventeen hours when the child died. After the ingestion of the milk the baby went into collapse and never regained consciousness.

Several shock cases have since come under my observation, cases of a lesser degree of severity. Cows milk in these was never attempted by me in any form. The wet nurse or goats milk has supplied the substitute. The symptoms complained of are the same in all, vomiting when cows milk was forced and prostration varying in degree and urgency, two of these children were seen in one family offspring of parent milk reactors. It is interesting to note that scratch skin tests to cows milk were invariably negative in the shock cases.

Group 2 relates entirely to gastrointestinal symptoms with a wide variety of

effects demonstrating the allergy, anorexia, habitual vomiting, colic periodic gastrointestinal crisis, failure to thrive without evident illness other than constipation requiring daily attention, often times alternating with diarrhea, a condition usually accompanying considerable abdominal distention. This gastrointestinal group is exceedingly large, coming from various sources and the story is very much the same. The most frequent complaint is failure to gain in weight regardless of other specific manifestations.

On examination of these patients there is absence of adipose, soft stringy muscles, incipient rickets, quite frequently secondary anemia, in short, generally undernourished, unhappy unsatisfactory infants.

Infants are never born with celiac disease, it is this group that supply the cases. This type also does not give positive protein skin reactions.

Group 3 Nutritional or gastrointestinal disturbances are not prominent here, the allergy is manifested by the skin reaction—atopic eczema, urticaria, giant hives.

The diagnosis of milk allergy in infants and children rests largely upon a clinical basis, in sixty-five cases of eczema in which scratch skin tests were carried out but five were positive to cows milk.

In spite of the negative scratch skin test the important feature of our treatment in eczemas consists in the use of evaporated milk cooked one to two hours or skimmed fresh cows milk cooked four to six hours.

It would seem from a clinical angle that skimmed cows milk cooked several hours supplies in many cases the best desensitized milk product for use in the eczema infant.

The presence of fat either interferes with the desensitizing process or adds an element that bears on the production of the eczema.

Since my experience with the shock cases through ingestion, I have not had the courage to try the intradermal method. This is borne out by the case reported by Ratner⁵ who tried the intradermal test with pure lactalbumin in a shock type of case under carefully controlled conditions, this child manifested a prompt shock reaction but recovered.

Postnatal milk allergy may develop at any period of infancy and childhood, and is explained by Ratner¹ as follows:

- 1 By isolated feedings of raw cows milk given to the breast-fed infant during the newborn period.

- 2 By giving raw cows milk during convalescence from disease and during and after gastrointestinal disturbances.

- 3 By the use of excessive and exclusive milk diets.

- 4 By the use of injections of milk from non-specific therapy.

Infants and young children showing clinical cows milk sensitization have been coming to me in increasing number during the past few years, with but few exceptions these patients have been fed full strength raw cows milk at a tender age together with other food substances unsuitable for the life period. The story is one of the overfed thriving infant, the family joy until trouble arises. The above feeding practice is probably the most successful way of producing a milk allergy in the individual.

Many cases of mucus colitis (chronic type) in runabouts and older children have been demonstrated due to a cows milk allergy through withdrawing the milk absolutely from the diet and substituting a desensitized cows milk product (calcium caseinate) sold under the trade name of Casec and made by Mead Johnson.

The studies on the basic principles of the treatment of milk allergy by Ratner¹ bears out my many years of experience. He has shown that the heat labile elements in the milk (lactalbumin and

lactaglobulin) are responsible for practically all cases of milk allergy for which reason they are successfully treated with some form of heat or chemically denatured milk. I have long advocated their use.⁶

Summary

The object of this contribution is to emphasize the importance of milk allergy and show how widespread are the manifestations that may result from such hypersensitiveness. The case of death that I report is very similar to the one reported by Finkelstein many years ago and should serve as a warning to all physicians who may be dealing with a shock milk reactor.

132 W 81 St

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A MEDICAL COUNCIL FOR BIRTH CONTROL

Formation of the National Medical Council on Birth Control to "initiate, encourage and execute appropriate scientific research in the medical aspects of birth control" was announced recently by the American Birth Control League, 515 Madison Avenue, New York City. The council is composed of seventy-one physicians in twenty-three States.

The announcement said the new group also would control and supervise all medical policies of the league, replacing a smaller

medical advisory board.

Dr Frederick C Holden, Emeritus Professor of Obstetrics and Gynecology, New York University College of Medicine, is chairman of the council's executive committee. Other members include Dr Foster Kennedy, Dr Eric M Matsner, Dr Edgar Mayer, Dr Richard N Pierson, Dr Wilbur Ward, Dr Eliot Bishop, Dr Ira S Wile, Dr William H Cary, Dr Robert L Dickinson, Dr John F Erdmann, Dr Sophia J Kleegman, and Dr Raymond Squier.

PAIN A LIFESAVER

"It's just too bad that tuberculosis doesn't hurt," declared a well known specialist just a few days ago. This remark set me to thinking, and the more I think of it, the more I am impressed with its wisdom.

When we realize that it is pain, not the diseased appendix, that drives the patient to the physician, often just in time to save the life of the patient, we are apt to be more inclined to recognize pain as a "blessing in disguise."

Diseases that cause no pain until they are far advanced, such as tuberculosis, cancer, pneumonia and heart disturbances, are apt to have a high rate of disability, or death, according to their several natures. Where pain is an early symptom of disease the physician is sought early in the course of the disease. As a rule the more painful the symptom, the better the chance of a cure, because help is more apt to be sought early.—L E Smith, M.D., *Bulletin of the Kentucky Dept of Health*

End of Willie's prayer—"and, dear Lord, please put vitamins in cake and candy in-

stead of spinach and cod liver oil"—*Illinois Medical Journal*

SELECTIVE OLEOTHORAX

CHARLES E HAMILTON, M D, *Brooklyn*

Chief Attending Physician, Division of Tuberculosis, Kings County Hospital

and

EMIL ROTHSTEIN, M D, *Brooklyn*

Junior Attending Physician

Oleothorax is one of the more recently introduced and less commonly utilized methods of collapse therapy in the treatment of pulmonary tuberculosis. It consists of the injection into the pleural space of varying amounts of oil, as a replacement of air or pus, for one of several purposes which are not satisfactorily fulfilled by artificial pneumothorax.

E D, white female, aged forty, of Irish descent, first became ill during the winter of 1932-1933 with cough and expectoration, loss of weight, anorexia, and night sweats. The ailment was diagnosed as pulmonary tuberculosis, and this was confirmed by examination, roentgenography, and sputum examinations. The pathology was shown by x-ray at this time to consist of tuberculous infiltrations involving both the right upper and left lower lobes. The patient was then

kept on modified bed-rest for about two years, with little improvement.

Upon admission to Kings County Hospital, June 6, 1934, she complained of cough, expectoration, night sweats, chills, and fever. Examination and x-ray study revealed a tuberculous process affecting chiefly the right upper lobe, with a major cavity about six cm in diameter, and tuberculous infiltrations through the lower portion of the left lower lung field, of a fibrotic character (Fig 1). The sputum was repeatedly positive for the tubercle bacillus.

Pneumothorax therapy was started June 12. A free pleural space was found and refills were given twice weekly. After two months had elapsed the major cavity was considerably decreased in size, however the patient still suffered from her original symptoms and the sputum was positive. At

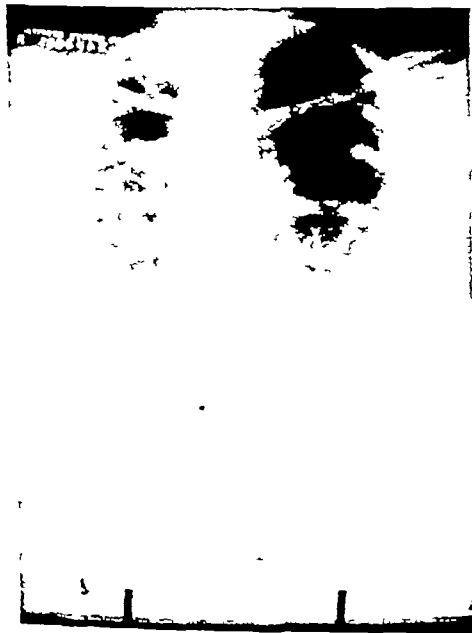


Fig 1 Entry to hospital. Large cavity is seen in the right upper lobe. Pleural thickening on the right. Fibrotic changes on the left.



Fig 2. After eight weeks of pneumothorax. Left unchanged. Right presents cavity smaller but patent. Adherent bands seen, especially one very broad one traversing the right chest.

this time it was seen that the right pleural space was traversed by numerous adhesions and adhesive bands (Fig 1), which radiated in all directions from the cavity. We felt at this time that they would prevent any further collapse of the cavity. In addition the patient was becoming more dyspneic due to the displacement of the heart and mediastinum to the left. The adhesions were considered too formidable for the Jacobus procedure. In lieu of a more satisfactory procedure the pneumothorax was continued

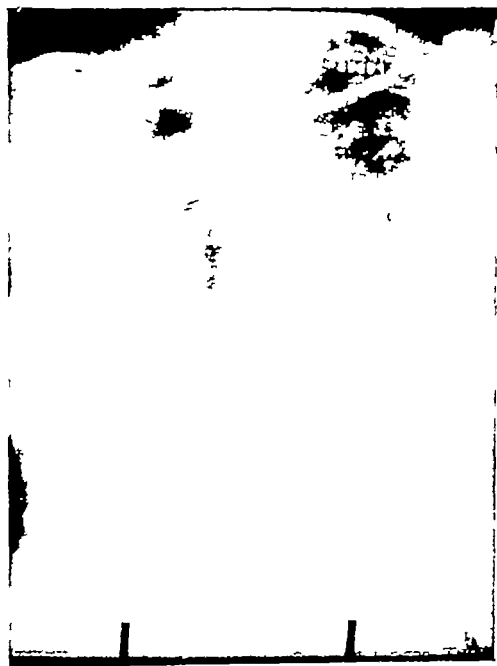


Fig 3 After fluid collection is present. Cavity much smaller

An x-ray taken August 24 revealed an unusual and unexpected finding (Fig 3). There had developed, as is common during the course of artificial pneumothorax, a pleural effusion. Due, however, to the broad adhesive band seen in Fig 2 the pleural space had been divided into two almost completely separated compartments. A large portion of the effusion had collected in the upper of these two partitions and by its direct compression had collapsed the cavity to less than one-tenth of its original size.

At this time several questions came up in considering further therapy. It was felt that if pneumothorax were continued in the usual manner the fluid would be absorbed, with reopening of the cavity. If, on the other hand, repeated attempts were to be made to enter the upper pocket, difficulty would soon be encountered as the pocket was small and in a rather inaccessible posi-

tion, since the walls of the pocket were composed of thickened pleura and many adhesions were present, it was believed that these factors would also lead to an obliteration of the pocket with re-expansion of the cavity. It was decided to inject oil into the pocket, with the purpose of introducing with a few injections a substance which would not be absorbed for many months.

On September 2 with two needles in the second right anterior interspace, 100 c.c. of one per cent gomenol in olive oil were

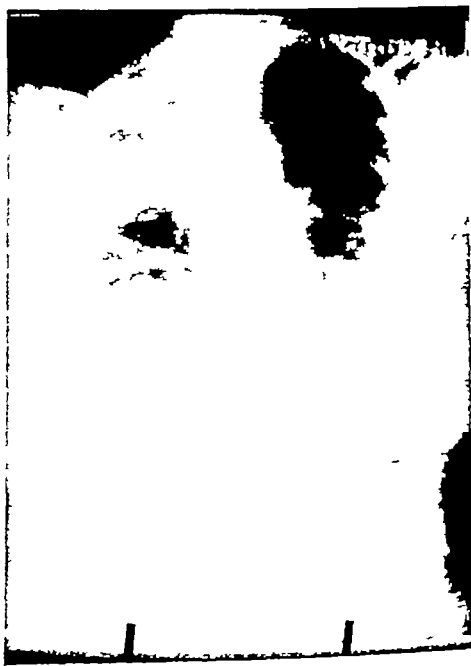


Fig 4 Shortly before discharge. The upper pocket is filled with fluid and oil. The cavity is no longer visible. Left is unchanged. Moderate effusion in the main pleural cavity

injected. A slight rise in temperature and right chest pain followed, both of which subsided within ten days. Many subsequent x-rays were taken, all revealed the pocket completely filled with oil and fluid (Fig 4). On none of the subsequent films could the cavity be visualized. The patient's condition from this time showed progressive improvement, temperature, pulse, and respirations became and remained normal. Anorexia, night sweats, and lassitude disappeared and cough and expectoration became reduced to an insignificant amount. Numerous sputum examinations, including several twenty-four hour concentration tests were negative for bacilli. She was discharged to her home under medical supervision December 21. On several visits to the hospital during the ensuing five months there was no change in her condition.

Discussion

In performing oleothorax, as a rule, one of two oils is used, mineral oil or olive oil. There is little to choose between them as each will be irritating to the pleura in a certain number of cases. It is said that mineral oil is absorbed more slowly. Very commonly gomenol is added to the oil to be injected. Gomenol is a resinous product with antiseptic properties. The concentration used varies from ten per cent in virulent empyemas to one per cent in noninfected cases.

Oleothorax has several major indications. Probably the most important is in the treatment of the postpneumothorax empyemas, where the pus is removed and replaced with oil at intervals of from one to several weeks. Second to its use in empyema, oleothorax is of use in the treatment of a re-expanding pneumothorax lung which can

no longer be kept collapsed by the use of air. Here the technic consists of replacing the air with oil. The rationale is based upon the very slight absorbability of oil as compared with air.

In the present case the use was based upon this latter principle. The unusual division of the pleural space into two almost independent pockets, together with the development of an effusion in the upper of these, with cavity closure, represented a fortuitous grouping of circumstances, and oleothorax seemed the only possibility of arriving at a satisfactory therapeutic result, with the exception of major surgery. Inasmuch as only a small oleothorax was produced instead of a complete one, which was selective over the diseased area, this type of oleothorax might properly be designated as selective oleothorax.

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BETWEEN MENTAL HEALTH AND MENTAL DISEASE

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Editorial Note: Under this title will appear short summaries of "transition cases" from the service of this author in the New York Polyclinic Medical School and Hospital. The descriptions are not complete clinical studies, but will accentuate situations from the point of view of individual mental hygiene such as crop up in the every day practice of medicine.

Alice in Wonderland

Here is a case of slight maladjustment in a child, but interesting because of its simplicity.

A boy of five walks in alone into the hospital clinic. He speaks fearlessly. "I had ice cream!"

My immediate conclusion is that such an event is not very frequent for him. And looking at his clothes I see that he is living in poor circumstances.

I ask him

"Where is your mother?"

"Mother will come in soon."

"What is your name?"

"Siegfried."

"Second name?"

"Giant, Siegfried Giant."

"Do you have brothers and sisters?"

"Yes, I have Alice."

He answers clearly, loud, correctly.

"Her real name is Alice in Wonderland."

"Is that so? Other sisters?"

"Yes, Alice."

"Is that all?"

"Oh, Yes, I have Minerva and my cousin Gretchen."

He repeats Alice in Wonderland several times. Apparently he likes her. Then he asks me

"What's your name?"

"Ben."

"Ben? And I have Doodoo. But where is my mother?"

"Is Doodoo your brother?"

No reply. His mother, a woman of about thirty, comes in. She had listened to our conversation from the outside and says

"There is nobody with that name. He didn't give you his true name and he has no sisters or brothers. They are all fictitious names from stories that he had heard. He gave the name Alice in Wonderland to a neighbor's little girl. She is his friend and he loves her. There is certainly something the matter with him. He is a problem child. He is a great problem and a puzzle to me. I am afraid he is going crazy. Please, Doctor, do something!"

The parents live separately.

"His father is also like that," she adds, "a neer-do-well, a dreamer, unable to make a living. He comes to see the child, but lately rarely, I don't let him."

The mother works and the child is boarding with a woman who has children of her own with whom he gets along very well.

It seems it was the kindergarten teacher who suggested that the boy be "psycho-analyzed."

The family history is negative. The child has had the measles but has been well otherwise. He is in ordinary health. Mentally he is rather superior. Among all the questions he fails to give only one answer correctly, that is his name. But he does that purposely, because he hates the old

name and has adopted a new one

The mother is attentive as he is made to point out his limbs, his head, his back, and so on, as he is shown familiar objects and pictures, as he is asked to repeat numbers and sentences. He knows who is a man, who is a woman, a boy or a girl.

He is cooperative. When told to take off his shoe, he does it properly. He also puts it on, except for tying the knot, which he has never been taught.

With chalk on the blackboard he draws a face quite acceptably. But suddenly he exclaims "I'll make snow!" And with great enthusiasm he scatters many white dots on the board.

At this point the mother stops him. "I am ashamed of you! You see, doctor, I am right. Isn't it insane?"

Then I give the child a toy—a box on which the head of a girl is painted, and containing a pencil, a penholder, and a small ruler. He grabs it and yells "Mother, the doctor gave this to Alice in Wonderland!"

At which she remarks "This shows he is not smart. You gave the toy to him."

She is unable to see that this is but a perfectly direct and childish logic. He is sure to present the box to his beloved Alice

in Wonderland, therefore it means to him that I have given it to her.

One little incident which sounds like an anecdote, but which cannot be held against this lovely child, incites the mother again to prove to me his "lack of intelligence."

At a given moment he is counting his fingers, his eyes, his ears—correctly.

He shows both ears saying "one, two, right, left."

I ask him "What do you do with your ears?"

"I count 'em," he replies at once.

This was only a misunderstanding.

When leaving he comes closer to me.

"Doctor, I wanna kiss you."

This is a contemplative child, full of imagination. He is far ahead of his mother. She is entirely incapable of appreciating his poetry, his seriousness, and sincerity while constantly acting and playing. His great mistake is his superiority. Fortunately, so far she has not succeeded in destroying it.

It is impossible to make prophecies, but some of the greatest men have been regarded as mentally inferior in their childhood and as "nuts" in their youth.

All this was subsequently explained to the mother.

Tangles

A young woman of twenty-four, single, occupied as an office clerk during the day and continuing some studies in an evening school, complained of being embarrassed "when meeting anybody" and of being unable to speak or recite in public, that is in the class room. Referred by one of her professors, to whom she told her difficulties.

"For the past eight years I have been contending with adverse conditions and with a distortion of my mental faculties. There are extreme nervous seizures of self-consciousness."

There were also ideas of persecution and, as their natural concomitant, some ideas of greatness.

Her background was most interesting and unusual.

Both her father and mother were Jewish, but her father died a few months before patient was born and, within a short time, her mother married a Christian Swede who accepted the baby as his own. Patient's name, therefore, was typically Swedish, something that would not have bothered any ordinary person, but which constantly filled this girl with remorse and made her unhappy, especially because, on account of that, she had received favors which would have been closed to her as a Jewess. She had also been brought up as a Christian and, while going, as a habit, every Sunday

to church, she felt uneasy as if she were an imposter. About eight years before she discovered that her mother was a common prostitute who used her earnings for the upkeep of the family, as her Swedish husband, dead since, had been ill and incapacitated from work for a long time. Patient was certain that all her friends disdained her because they suspected her mother.

There were hundreds of other details resulting from this unpleasant situation and from the paranoid mentality of this patient. But I shall not mention them.

Our conversations had to be frank and outspoken. They succeeded in giving our patient a new philosophy of life, in enabling her to face her problems squarely and to overcome most of them within a few months. After two weeks she wrote "I believe that I begin to see the light, although it is still hard to traverse the way out. I mean I am having a hard time training myself, but it is worth while."

She soon launched into sociability, dared to do some of the things which previously had been completely taboo to her and she proved to be interesting, bright, and successful. She cannot be said to be cured, but she is able to live with a slight mental handicap, which emerges only from time to time and which she has learned to suppress.

NEW YORK STATE JOURNAL OF MEDICINE

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EDITORIALS

Labor and Social Security

In the recent adoption of its program on social security the State Federation of Labor wisely did not include in its scheme any mention of compulsory health insurance. We doubt that this was an oversight. Rather would we think it a deliberately studied and intentional omission.

We commend the omission. Labor knows that compulsory health insurance was nowhere proposed abroad as an effort to improve the level of living for the workingman. It was, on the other hand, and still is, one of the factors in the production of cheaper labor for the industrialists, because into the consideration of the costs of labor must go the cost of the laborer's production. The money the laborer spends for medical care necessarily must be reckoned into this account. Hence to produce cheaper labor, give him less wages and provide him as cheaply as possible with some sort of medical service!

The costs of the service the laborer must bear in having a deduction made from his pay envelope, and in addition, by paying the indirect and hidden taxes to cover the costs of the bureaucracy which represents the government's share in the scheme. Finally, the inevitable rise in the cost of the things the laborer buys, because the employer passes on his share

of the tax burden by increasing the price of the manufactured article by just that much, leaves the laborer with a smaller pay envelope to meet a higher price level for most of the things he is wont to buy. The result—the laborer is forced to live on a lower living level.

Labor in our country is not stupid,—usually. It has won for itself a steady improvement in its living environment and standards. Notwithstanding propagandists, labor is too hard-headed to be argued into less wages and lower living standards in exchange for compulsory health insurance which, upon study and comparative analysis of its results in countries which have it, and those which have not adopted it, appears unable to compete with the quality and character of private medical practice as we know it in our country.

Cooperation from Understanding

In spite of the many points at which law and medicine touch, there has been little organized cooperation between the two professions to secure common aims. In New York City the Society of Medical Jurisprudence has succeeded in bringing an understanding of mutual problems to a small group of metropolitan doctors and lawyers. This association is however almost unique in its field. For the most part the legal and medical professions go their separate ways, oblivious or indiffer-

ent to the benefits to be derived from closer contact

There are many legislative questions arising each year in which medicine and the law have a lively if indirect interest. Anything tending to restrict the intellectual independence or responsibility of either is of direct concern to the other. In many respects the liberal professions not only stand apart from but run counter to the commercial currents of the times. They are not governed by the concepts of industry and they cannot employ the same weapons to defend their interests. Only by making common cause and presenting a united front to aggressors can they successfully resist the growing tendency to regiment and undermine the economic security of professional life.

There are individual, concrete advantages to closer cooperation between medicine and the law. A greater familiarity with statutory obligations would prevent many physicians from becoming embroiled in malpractice actions. Conversely a better understanding of medicine would keep attorneys from precipitating unwarranted litigation and aid in the management of just cases. Combination of the forces of justice and health should work to the public benefit too.

Certainly there is nothing to be lost by closer collaboration between medicine and the law, and much to be gained. The matter is well worthy of further consideration by both professions.

The Acid Test

Books and magazine articles by lay authors continue an abundant propaganda to impress the public with the alleged benefits of compulsory health insurance. A supposedly conclusive argument for American adoption of this system is drawn from the fact that no European nation has discarded obligatory prepayment for sickness after experience with its operation. The propagandists carefully avoid any comparisons between the conditions which preceded compulsory health insurance in Europe and existing stand-

ards of medical care in the United States. Almost any system would have been an advance over the low grade contract practice from which the English workman, for example, suffered prior to the adoption of compulsory health insurance. However, the much vaunted improvements of the panel system are still inferior to the average level of medical service in the United States.

The lay advocates of compulsory health insurance make the mistake of substituting quantitative for qualitative standards of medical care. If there is any conclusive gauge of the efficacy of a system of medical service, it is furnished by vital statistics. The accurate and impartial figures compiled by the League of Nations for the period from 1911 to 1934 make out a far better case for private practice than for obligatory prepayment. Not only were death rates generally lower in the uninsured nations but preventive measures were more universal and apparently more effective. In not one respect measurable by statistics rather than prejudice did the countries with compulsory health insurance equal the showing of those whose citizens rely chiefly on private practice to supply their medical needs.

The question of costs is another aspect of compulsory health insurance that has not been treated with complete frankness by its advocates. The small sum usually cited as the worker's contribution is far from telling the whole story. So far none of those urging obligatory prepayment as a boon to labor has attempted to figure out what the latter would pay in indirect taxation and increased living costs in addition to the prescribed deductions from wages.

The Hearing Aid

It is not beyond the memory of the present generation of physicians when only the medical profession was permitted to examine the eyes and prescribe for their treatment. Today it is no longer illegal for the registered optometrist to examine and dispense lenses for the correction of impaired vision. This he does

without making a diagnosis of the cause for the faulty eyesight.

A further encroachment upon medical practice is the insidious advertising of the various concerns which manufacture aids for the hard of hearing patient. Nothing is mentioned in their advertising material which would make the reader aware of the fact that deafness is the result of many conditions, nor is it stressed that not all types of deafness are benefited by the use of an artificial hearing aid. The purpose of the manufacturers is to attract business, but, in a large sense, this is not in conformity with sound public policy. It is not fair to sell an instrument to a deafened individual who will not be benefited by its use.

The knowledge of whether or not a hearing appliance will help an afflicted individual can be determined by an otologist and his advice should be sought before an aid is bought. In the case of the indigent, hospitals and organizations such as the League for the Hard of Hearing are available for such expert service. In any event the advertising of hearing aids directly to the public with no statement to the effect that they will not help in all cases should be forbidden as misleading. The manufacturers themselves can do a great deal of public good if they would refuse to sell an appliance except on the recommendation of a physician.

Protamine Insulin

One of the problems in the treatment of diabetes has been the control of the wide fluctuations of blood sugar which are noted at different times during the day. Insulin in itself cannot do this because of its rapid action. Hagedorn's isolation of protamine from the sperm of the trout which when added to insulin forms protamine insulin, now affords the clinician with a means whereby the insulin will be absorbed slowly over a period of time.

Administered subcutaneously this new compound is slowly broken down in the tissues and the insulin is liberated into the blood stream in even, small doses. It cannot be used intravenously and, because

of its slow action, should not be given in diabetic coma. Insulin reactions following its use are more apt to make their appearance gradually and so afford more time in which to feed carbohydrates so as to counteract the impending shock.

The clinical data obtained from the use of protamine insulin is still more or less experimental in nature. The milder the diabetes, the better the control with this type of therapy. Winnett¹ feels that its use over a longer period of time and under various conditions will be required before exact knowledge of its values and action will be available.

CURRENT COMMENT

"* * * 'PLANNED SECURITY' is the prerogative of convicts and slaves, it could never have produced the breed that discovered and colonized and enriched America * * * Governmental paternalism, protecting the weak, not only from the strong but from the results of their own weakness and folly and idleness and thriftlessness, can be but a wholesale creator and preserver of these qualities. This applies even to old-age and unemployment insurance—to engaging that the man who does not save will be supplied out of the savings of others, and that the man who does not work shall be supported by the man who does. If you want to insure work, insure work, and not rewards for not working, or for doing unnecessary work lazily and badly. It ought not to be more difficult to keep industry going at a pace that will provide jobs than to provide a dole at the expense of an industry that is not going * * *

"We talk of 'social security', there is not a conspicuously good and useful citizen in America today who is not being threatened and harassed almost to the point of defection. I don't mean only captains of industry. I mean doctors and tradesmen and skilled artisans, every man-jack of us who has won his office or shop, who has a dollar in money, life insurance, stocks, bonds, mortgages, or credits. Before we heard of the More Abundant Life, we had pretty definite ideas of honor, integrity, industry and thrift. We knew what we were doing, and where we were going. Now, nobody could be found wise and brave enough to back a bet either way. Nobody dares hazard a guess as to what will happen next. * * * The rights of minorities are derided and assailed, we are surrounded by spies, and tax devisors and

¹ Winnett, E. B. *Iowa State Med. J.* 26:231, 1936.

collectors, and bureaucrats who want to run our business and our everyday lives * * *

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"DOCTORS ALWAYS SUBMIT THEIR IDEAS to other doctors, and check their experience with the experiences of others, before public statements are issued regarding new developments in medicine. This is a process of self-discipline and self-criticism which the profession has developed to protect the public from exploitation *A Quack is a man who talks about medicine to everybody but doctors*—From the Saint Louis County Medical Society *Bulletin* of August 21, 1936

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Correspondence

[THE JOURNAL reserves the right to print correspondence to its staff in whole or in part unless marked private. All communications must carry the writer's full name and address which will be omitted on publication if desired. Anonymous letters will be disregarded.]

57 West 57 St., New York City
To the Editor

I understand that the editors of the N Y STATE JOURNAL OF MEDICINE "endeavor to publish only that which is authentic", and therefore, I take the liberty of attracting your attention to the following, which I found in the July 15 issue of the JOURNAL, p 1032, under the title, "What is Certified Milk?", (last paragraph) Quoting "Certified milk is more nutritious per pound than a pound of steak" According to tables published by the U S Dept of Agriculture, I find that porterhouse steak has a food value, per pound, of 1270 calories, sirloin steak, 1130 calories, tenderloin steak 1330 calories, while whole milk has a value of only 325 calories per pound

Such distortion of facts is outrageous and should not be allowed in a scientific magazine

Very truly yours,
J VICTOR DONNET, M D

September 3, 1936

180 Fort Washington Ave
New York City

To the Editor

About the thirteenth of August while I

was on my way back from England a man giving the name of Mr Robert McGraw opened an account with the Columbus Branch of the Chase National Bank with a check on a Springfield, Massachusetts bank The man at that time said that he was a buyer for a firm in Springfield, Massachusetts He later cashed checks at the Hotel Monterey, Asbury Park in small amounts and a few days later attempted to buy a suit of clothes at a tailoring establishment on Broadway New York, near the vicinity of the Columbus Branch of the Chase National Bank. Subsequently, he has evidently traveled through southern New England and New York State, apparently going west

He is described as a man about five feet eleven in height weighing approximately two hundred pounds

Hotels and clothing establishments might seem to be the most usual victims but probably professional men should be on their guard also

Very sincerely yours,
ROBERT B MCGRAW, M D

P S Lately he has been using my name and my home address, 1215 Madison Ave NYC

August 26, 1936

HEADQUARTERS SEVENTH CORPS AREA
Office of the Surgeon

Omaha, Nebraska,
August 12 1936

Surg 353 OR (Mayo Foundation) JRH 4000
Subject Medico-Military Inactive Duty Training, Mayo Foundation
To Medical Department Reserve Officers

1 The eighth annual training course for Medical Department Reservists of the Army and Navy will be held at the Mayo Foundation, Rochester Minnesota, from October 4 to 17, 1936

2 This training course was first inaugurated by the Seventh Corps Area at the request of the Mayo Foundation to give training in military medicine to the younger medical men connected with the Foundation Other reserve officers requested permission to enroll and to take advantage of the opportunity to attend clinical presentations during the morning hours Such permission was granted and such attendance has become so increasingly popular that it is now necessary to limit the enrollment

3 The program will follow the plan of

the past years The morning hours will be devoted entirely to professional work in special clinics and study groups Officers in attendance may select the course they wish to follow from the wide variety of presentations offered The afternoons and evenings will be devoted to a medico-military program under the direction of the Surgeon of the Seventh Corps Area (Army) and the Surgeon of the Ninth Naval District (Navy)

4 This training is on an inactive duty status and is without expense to the Government Enrollment is open to all Army and Navy reservists of the Medical Departments in good standing Application should be submitted to the Surgeon of the Seventh Corps Area, Omaha Nebraska or the Surgeon, Ninth Naval District Great Lakes, Illinois Enrollment is limited to two hundred

5 The Surgeons General of the Army, Navy, and Public Health Service have signified their desire to attend at least a portion of the course

KENT NELSON
Colonel Medical Corps, Surgeon

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to diseases of the gall-bladder, undoubtedly play an important part.

For the comfort of those who suffer from diabetes, let it be known that very great progress in the knowledge of this disease has been made in the last decade and a half. A large part of the credit for this is due to American investigators, and the discovery of insulin by Banting and Best has lessened the dangers and the ravages of the disease. The life of the diabetic has already been greatly prolonged—particularly that of the young diabetic, and it is the opinion of most students in the field, that cases properly treated should not die of the diabetes. Notwithstanding this assertion, statistics inform us that the mortality from diabetes is on the increase. However, this strange discrepancy can be adequately accounted for, and should not be construed as a cause for pessimism. It is due in part to the fact that neither the public nor the profession are fully informed on the subject. It indicates also very definitely that further education is necessary. The contributory causes of diabetes, which I mentioned before, should be properly understood and heeded—particularly by those who by virtue of race or heredity are particularly predisposed to it.

When we realize that the outstanding feature of the disease is loss of sugar in the urine, it becomes immediately clear that the body is thus deprived of its principal nutrient, and varying degrees of sugar starvation occur. The body must have sugar for sustenance. Without it, tissue waste and degenerative changes in various organs take place. The greatest damage occurs in the blood vessels. The arteries of various organs may become so affected in diabetes, that a number of very serious complications, such as defective vision or complete blindness, injury to the heart, and gangrene of the legs often ensue.

As stated, the disease is most frequent in middle age. The earlier it occurs the more severe it is. In children it is sharp in its onset, and violent in its course, and if *untreated* leads promptly to acidosis, coma and death. Conversely, the later it appears, the milder usually is its course, but, there is no case so mild, that it cannot become suddenly aggravated. Many incidents are capable of causing this change. The commonest cause is infection. The older diabetic is particularly prone to infections. His skin is dry, scaly, and is easily broken. His circulation is poor, because of the changes in the blood vessels. His tissues are undernourished—and their resistance to injury and infection is greatly reduced. All infections must be properly cared for, no matter how trivial they may

appear to be.

In view of the fact that excellent methods of treatment have been developed, disregard or neglect of diabetes at any period of life is unpardonable. Many of the ill effects can be obviated by timely intervention. Usually the symptoms of diabetes can be readily cleared up, and a state of health closely approaching the normal, re-established. These facts should be made known to the public by education. Experience has shown that the best means of safeguarding health is by prevention or early recognition of the disease. People should be made to understand the nature of the disease, how it is acquired, and the best way of preventing and treating it.

Those who are in good health but in whose family a history of diabetes exists, will do well to undergo a periodic examination by a physician. In this way the diabetic prospect can be forewarned, the predisposing causes eliminated, and the disease actually controlled in its earliest stages. Too much cannot be said on this score.

Those who now suffer from diabetes should know that we possess at present only two well-established methods of treatment—namely diet and insulin. Some patients do well on diet alone, others require both diet and insulin. Any fear of insulin is entirely unwarranted when its use is properly regulated. It is not a drug. It is not habit-forming, and may be discontinued when, and if, it is no longer necessary.

Insulin is indispensable in acidosis and coma. Formerly operations on diabetics often terminated in acidosis, coma and death. Insulin has removed this hazard, and now, even the most serious operation may be undertaken without any fear of this danger. Moreover, other reliable remedies for diabetes are *not* available now. Credulous persons who read advertisements are often seriously misled into trying other methods of treatment which appear simpler—but with disastrous results.

The diabetic patient ordinarily goes first to his private physician—the general practitioner, for advice. Diabetes is one of the few diseases capable of accurate scientific control, and every physician should be qualified to treat it. Indifference, neglect or carelessness in its management should not be tolerated. The diabetic has a right to demand of the physician the utmost competency in the care of this disease. He should be given complete instructions to guide him. Many of the tragic consequences resulting from ignorance or neglect are avoidable.

The diabetic patient certainly has no cause for despair now. The medical profession possesses the necessary means to make his

Society Activities

Annual Meeting Open Forum

*Conducted for the public at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 29, 1936*

WHAT THE COMMUNITY SHOULD KNOW ABOUT DIABETES

ALBERT A. EPSTEIN, M D, *New York City*

Clinical Professor of Medicine, New York University College of Medicine

Diabetes or sugar-disease is a very large subject—and with the time allotted, it is possible to speak only of a few of the more important points, which deserve public attention.

Sugar is the chief source of energy in the body, it is the fuel which provides heat and power. Most of the food we eat is converted into sugar. This is true not only of the bread, sweets, fruit and vegetables we eat, but meat, cheese, eggs, and butter also contribute their share of sugar.

Every part of the body requires sugar for sustenance. For that reason a certain amount of sugar is always present in the blood. In the healthy individual, the sugar is used up completely and none is excreted in the urine. The ability of the body to consume the sugar usefully is believed to be due to the presence in the blood of a substance derived from the pancreas. This substance is known as insulin.

Under certain conditions the body loses the ability to use sugar in the manner stated. Consequently the sugar accumulates in the blood, and, when it exceeds a certain level, is excreted by the kidneys in the urine. If the rise in the blood sugar persists, the sugar excretion in the urine continues and the nutrition of the body becomes undermined. This is the sum and substance of the disease known as diabetes.

Since the body cannot use sugar in diabetes properly, and continues to lose it in the urine, it virtually starves—starves for the sugar which it cannot use. As a result of this condition, the affected individual experiences certain symptoms, such as hunger, thirst, itching of the skin, loss of weight, and weakness. Some cases do not develop these symptoms and the disease is discovered only in the course of a casual medical examination. In most cases, however, these symptoms develop early, and may be so distressing as to cause many to seek medical advice promptly. In persons who are less observant, less cautious of their health, these symptoms may go

unheeded. Blissfully ignorant of their danger, they try to appease their growing appetite by eating more—only to make their condition worse.

As the loss of sugar in the urine rises, the nutrition of the body suffers more and more, and certain poisonous substances develop which appear in the blood and the urine. These substances are acid in nature, and they produce a condition known as acidosis. Acidosis is very dangerous because it ultimately causes unconsciousness or coma, which eventually leads to death.

This is the course the disease pursues in most untreated cases. In young people and children, diabetes often develops very suddenly, and progresses with great rapidity. The appearance of the symptoms referred to, particularly in children, should not be ignored—and medical advice should be sought without delay.

Diabetes is believed to be due to a decrease in the amount of insulin secreted by the pancreas, or to its failure to act in a normal way. It seems probable that the other glands in the body also play a part in the disturbance.

However, just what causes the disease in one person and not in another, is not known to us, but we do know the conditions which favor its development. They are in brief *race, heredity, obesity, over-eating, lack of exercise, and emotional instability*. Heredity is undoubtedly the most important of these. While certain races of people seem to be more predisposed to diabetes than others, the environment as well as dietary and other habits alter racial predisposition. This is supported by the fact that even such races of people who do not ordinarily develop diabetes on their native soil, do so when they live in a strange environment, and acquire the customs and the dietary habits of the new environment.

Diabetes is most common in the middle period of life. It is more prevalent in women than in men—and in this result child-birth, overweight, and the propensity

With the onset of pain most patients imagine that they need a movement of the bowels, a "cleaning out" as they so often state, and they rush to the bottle of salts, calomel or the dose of castor oil. All purgatives are harmful and attain no purpose except the aggravation of the disease. A celebrated surgeon once said, "purgation means peritonitis and peritonitis means death." The lack of a free movement of the bowels does not cause acute abdominal pain. The promiscuous taking of laxatives or purgative medicine of any sort in colics or other distresses in the belly, is the cause of thousands of deaths each year. Such increase the movements of the intestine and favor perforation. If a man has an inflamed hand he does not swing it around and bump it against obstacles. He puts it in a sling and keeps it quiet. The same analogy holds true with the bowels in the vicinity of the appendix.

There is a common idea that an ice-bag relieves appendicitis, freezes it out. Such is erroneous. The cold of ice applied to the abdomen does not reach the appendix, because the skin, fat, and muscles act as insulators. This is scientifically a fact. Cold only numbs the nerves and lessens pain, gives a false security, and has no basic action on the progressing inflammation in the appendix or the occurrence of perforation.

The use of opiates, such as paregoric or "cholera mixture" is more rational but here a false security is attained and the symptoms masked obscuring the diagnosis. The physician cannot possibly have an intelligent view of the case, if the patient has been stupefied and his symptoms deadened by opiates.

The ideal course for the patient to follow who suffers from acute abdominal pain is to get to bed, take no food or water, no purgatives or even an enema and send for his physician. An enema acts about twenty-five per cent on the movement of the intestines as compared to a purgative and hence had best be avoided until ordered by the physician.

The patient may feel that this advice is too restricted but he should realize that his life may be at stake, that death from appendicitis occurs from delay and from the use of purgatives, and that death is entirely unnecessary in most cases. Only a skilled physician can say whether an acute abdominal pain is a transient trifling disorder or due to acute appendicitis.

Acute appendicitis in a sense is a public health problem. Even more than cancer appendicitis needs research studies which will aid in reducing its incidence. Until

this is done the profession does, and the lay public should, realize that there is no treatment for acute appendicitis except removal of the appendix before the infection has passed from the appendix to the peritoneum and caused the highly fatal peritonitis. In a fair percentage of cases the attack theoretically may be tided over, but who can tell early which cases will subside and which will progress to perforation and peritonitis? When sufficient symptoms are present to make a diagnosis of appendicitis the case is sufficiently serious to necessitate prompt operation.

The mortality figures of the United States show a death incidence of about twenty thousand persons each year. Statistics from the clinics of many surgeons show a negligible death rate in those cases where the infection is confined to the appendix, a high death rate when spreading peritonitis has occurred. Ordinarily the disease is easy to diagnose, only occasionally will the symptoms be obscure and in such cases the patient who has not a good doctor is simply out of luck.

Another point and an important one to the average patient, is the time element. Operation in the early stage rarely requires drainage and the patient's stay in the hospital rarely exceeds two weeks. Cases with abscess or peritonitis often need drainage necessitating a prolonged stay with painful dressings. This point is of economic importance because of the increased cost of hospital and medical care.

Ordinarily in deciding upon operation certain factors are considered relative to the general condition of the patient, but in an acute disease such as appendicitis the danger of the disease itself is paramount and except in unusual circumstances such things as a supposed "weak heart," fear of anesthesia, the presence of a cold and so on, are of little importance. Modern surgery knows how to take care of these things and safeguard the patient.

One final word, the family physician is the patient's best friend, and he will not precipitate an operation without cause. If he sends the patient to a surgeon the latter knows whether or not an operation should be performed at once or delayed for some hours while treatment is instituted to improve resistance. The surgeon is concerned with his mortality figure and while this may sound a bit cold-blooded, yet in the long run it works to the best interest of the patient. The combination of an early diagnosis and a prompt operation is the ideal and if such was a universal procedure few would die from acute appendicitis.

life happy and useful. I am not in accord with those who take a pessimistic view of diabetes, who delight in distorted mortality statistics, make gloomy predictions, and spread the gospel of fear among the sick and well alike. The methods available to us render the disease amenable to treatment, nay, more, there are many indications that we may still go beyond that point. All the avenues of approach to the problems of treatment have not been traversed. Our knowledge is steadily advancing—and we

confidently hope that a method will finally be evolved, which will not only restore the diabetic to a normal state of health but cure the underlying cause responsible for the disease. The public should know all about diabetes, but it should not be alarmed or misled by unwarranted statements.

The diabetic patient should follow the doctor's guidance but the doctor must be prepared to guide his patient properly.

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DEATH FROM ACUTE APPENDICITIS

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Acute appendicitis is the number one operation in all surgical clinics. It is the number one public health surgical enemy. Nearly twenty thousand young adults at an average of twenty-eight years, die each year in the United States from this disease and the pity of it is that most of these deaths might have been prevented.

Appendicitis is an inflammation of the vermiform appendix caused by micro-organisms just as acute tonsillitis is caused by micro-organisms. The appendix is a tube about three inches long hanging dependent from the cecum, the first part of the colon, and situated in the lower right quarter of the abdomen. Under certain conditions the proper drainage of this tube is obstructed, infection takes hold, and the appendix becomes swollen and inflamed.

Under certain conditions again this tube may perforate and the infectious material gain access to the peritoneal cavity causing the disease called peritonitis. It is not clear just why the infection occurs at a particular time but it seems to take hold when resistance is low and when infection such as influenza and the common cold are common. The quality of a meal is unimportant and yet most patients blame a particular food for the onset of the affection. Acute enteritis from food poisoning is a different condition and easily recognized by the physician. The patient complains of violent abdominal pain with immediate vomiting and early diarrhea. Certain other phenomena are entirely absent. This is important because most patients are prone to blame a particular article of diet for the onset of the abdominal pain.

What then are the symptoms of appendicitis in its incipient and acute forms? In the order of their occurrence and importance they are (1) pain (2) nausea and vomiting (3) rigid muscles. Later there will be tenderness, slight fever, slightly in-

creased pulse rate, and a rising percentage of white cells in the blood.

Pain is the first and foremost symptom, and any young adult with acute abdominal pain should suspect that he might have acute appendicitis. This pain is like a "colic" and at first may be in the epigastrium or around the navel. In a few hours it tends to localize in the right lower quadrant of the abdomen and at this time the tenderness in this location and the rigidity of the muscles become more apparent. Vomiting is not always present but nausea usually occurs. Any rise of temperature is important because in the earlier hours fever rarely accompanies the conditions simulating appendicitis. Under such circumstances the intelligent patient will consult his physician who will be able to differentiate the symptoms from conditions simulating appendicitis and by an examination of the blood, determine the resistance of the patient to infection.

I have noted that most patients have the onset symptoms during the night and it is important that they insist upon an early visit by their physician. In a certain percentage of cases violent symptoms are followed in a few hours by the relief of pain and this is of ominous and not favorable import because rupture of the appendix may be followed by a period of relief before the symptoms of a spreading peritonitis make their appearance.

The patient should not wait for symptoms to become sufficiently serious to indicate the necessity for prompt operation. No one except an experienced physician can tell whether or not the appendix has ruptured or is on the verge of rupture. Cessation of pain is no criterion because the tenderness, the rigidity, temperature, pulse rate, and the leukocyte count, must be taken into account.

system which *predisposes* him to stuttering

Parental neuroticism plays a significant part in the instability of the stutter-type. By "parental neuroticism" we mean a chronic state of nervous irritability, tension and anxiety. We all know the parent who is irritable, who scolds and nags, placing a burden on the nerves of a sensitive child. Thus handicapped by an inheritance from a parent emotionally unstable, and an environment colored by parental neuroticism, the child is reared in a definitely detrimental environment—a whirlpool of agitation.

Although we are far from understanding emotional balance, there is evidence that it depends on a corresponding balance in the functioning of two nerve systems which appear to check each other—the parasympathetic nervous system slowing certain activities, and the sympathetic nervous system quickening them. Normally the parasympathetic remains in dominance for the maintenance of routine functions. The sympathetic dominance is a nervous status called out by special strong stimuli, "jacking up" the organism in emergencies. Normal adjustment to environment calls for organization at both levels, without predominance of one or the other except at its proper time.

In the case of the stutterer, however, heredity and environment incline him toward a dominance of parasympathetic influence, so that he is more or less unprepared for those emergencies which necessitate sympathetic nerve control. When an emergency arises, his sympathetic nervous system does not take over complete dominance and he cannot remain organized under its influence. There is a conflict, due to his tendency to remain on the parasympathetic or slow system. Even in ordinary circumstances, when the stutterer should be on the parasympathetic plane, his fears create uncalled for emergencies which bring out a spasmodic sympathetic nerve activity, manifesting itself in the various hesitations and spasmodic muscular movements.

Many children are prone to overstimulation, so that they literally wear themselves out by their incessant talk, losing control of the mechanism of the vocal tract, with resulting hesitations. The pre-school stutter-type child with his neuropathic diathesis—that is, his nervous predisposition—has more difficulty in learning speech than other children, due to a lower grade of expression or psychomotor efficiency, with its accompanying functional disturbances. Mothers wonder why some children outgrow these manifestations and speak normally, while in others the trouble persists.

Children vary markedly in the vulnera-

bility of the speech apparatus. A mechanical disability and poor habit formation does not allow their speech to develop normally. It does not become a flexed conditioned reflex. Aside from this, no doubt there is inherently greater difficulty in surmounting environmental stress, mental unrest, with its anxiety, worry and fear.

The uneven sex distribution of stutterers lends support to our view. About eight times as many boys as girls stutter. There are many reasons for that. Aside from the fact that fundamentally there is a decided difference between male and female, especially in the makeup of the female nervous system, we must take into consideration that early environmental stress is never as hard on girls as on boys. The element of competition enters into the life of young boys much more decisively than in that of girls. Boys' games are more strenuous than girls'. The injudicious shielding of the boy by the mother who centers her affection on him further weakens him, so that he is unable to cope with environmental onslaughts. This anxious protective zeal is not beneficial but detrimental to the boy.

Besides this, since speech is the result of practice, girls being more loquacious, their speech facility is not disturbed so readily. And since they possess a finer nervous mechanism, a higher rhythmic sense, better coordination, and a higher progressive trend, it follows that they are less liable to lose their standard of organization under new environmental conditions.

When treating a stutterer, one must consider the whole personality of the individual. The reorganization of the stutter-type, therefore, cannot be brought about through temporary measures of distraction from his defect. His rehabilitation is a complex health problem of a medical-social nature, for only through a composite therapy can adaptation be brought about.

We have found that the type of treatment carried out in a medical-social clinic is a powerful motivating force for the integration of the stutter-type personality. In the course of constructive psychological analysis, potentialities long inhibited are released. In a specially created environment, through a composite therapy of a medical, psychiatric, re-educational, and social nature, the chronic hesitator learns to act harmoniously, in an organized and confident manner, and acquires a standard of emotional stability. He not only gets tranquilized, but learns to keep tranquilized.

Thus, out of anxiety and chaos comes order and peace, and with it normal speech—a fulfillment of the wish of every stutterer.

STUTTERING AND THE STUTTER-TYPE PERSONALITY

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Stuttering is not synonymous with stammering although they are often used interchangeably. Stammering stands for defective articulation depending on performance, while stuttering stands for hesitant speech with resultant defective conversation, depending on certain states of mind in the form of emotions, feelings or attitudes.

Stuttering speech is one of the many manifestations of the stutter-type. This special type personality is readily recognized. Personality is expressed through the medium of one's nervous system. The type of personality which one presents to the world depends largely on whether his nervous capacity for response to the impacts of his environment is strong, weak or moderately strong. The stutter-type, on account of his nervous constitution, forms part of the group of strongly excitable individuals, whose uncontrolled reactions disturb their mental and physical activity.

The stutter-type is a chronic hesitator, coming from neuropathic stock, demonstrating neuropathic tendencies. This means that he has an inborn liability, an hereditary tendency, to nervous instability. Although intellectually and physically he is up to par, his emotional instability makes a rationally ordered life impossible, and results in a disintegrated personality.

In this stutter-type group are individuals who hesitate in more ways than in speech. Their motor-overflow shows itself in hesitating technical performance. For instance, there are those who stutter playing the piano or violin, others who make the type-writer stutter, and others who demonstrate their hesitation in such acts as dancing, golfing, driving an automobile, etc. I am sure everyone has observed stuttering automobiles, the driver imparting his own spasms to the operation of the machine.

Likewise a stutterer, when emotionally aroused, may impart spasms, so that his speech is often characterized by tonic and clonic spasms of the vocal tract. However, no matter what form his hesitations may take, it does not alter the fact that he is a stutterer.

Many theories have been advanced to explain the difficulties of the stutter-type. The conception we advance stresses the role played by primitive emotional reactions, especially fear and allied emotional states, setting off the tendency to many hesitating acts. This is particularly so in such a symp-

tom as stuttering. It is the neurotic mechanism, converting the psychic conflict into the physical symptom—stuttering.

Emotion is a strong feeling or an aroused state. There is a normal range of emotion between that of mere neutrality and a state of "pleasant excitement." When a crisis calls out a surge of emotion, the stutter type, unlike the non stutter-type, has less equilibrium to start with and also lacks practice in meeting his difficulties. Therefore, his emotions have a tendency to establish a violent and uncontrollable wrought-up condition. This characterizes the stutter-type personality, in whom the emotional turmoil of recurrent speech crises has become chronic.

Speech, our most complex, finely balanced muscular activity, is easily upset during periods of intense emotion. Many nerve areas and muscle groups, both large and small, must work in perfect harmony. Now when an individual is in a storm of conflicting emotions, lines of communications are broken, and the misdirected nerve messages become delayed or diverted into spasmodic contractions. Most of us at some time or other have experienced the distinctly unpleasant condition of loss of speech due to emotional turmoil. If we realize that the stutterer is in just such a state many times a day, our fundamental problem becomes clear.

The stutterer, although he lacks a well-trained neuromuscular organization, in his aroused state constantly tries to produce the split-second response that he sees in the normal speaker. If he cannot produce speech spontaneously, he often flies into a panic, which further demoralizes his speech faculties. He therefore unloads his surplus motor overflow in various ways—peculiar bodily movements, spasms of the musculatures involved in speech, tenseness throughout the body, and a general feeling of unbearable anxiety culminating in fear—and thus a vicious cycle is instituted.

A general predisposition toward emotional instability can be traced in the families of the stutter-type. Last year our survey of over a thousand patients showed forty per cent had stutterers in their immediate family, and over one-half gave a definite family history of nervous instability. A child, therefore, does not necessarily inherit stuttering, but belongs to the stutter-type and inherits a general instability of the nervous

Hereditary tendencies express themselves in many ways. Some can be helped if discovered early and correctly treated, others can be retarded but, in a few nothing can be done to postpone the advancing darkness.

Poor vision may be the effect of occupation.

The retina, the seeing layer of the eye, may be separated from its base either by growth beneath it, progressive near-sightedness, or a blow on the eye. The patient becomes conscious that a portion of his field of vision is absent or that a floating cloud partially covers his sight. If the detachment is the result of a tumor, the eye must be removed. If it is the result of a stretching or a tearing of the retina, it is susceptible to treatment by the use of special electric currents.

General diseases cause poor sight. In scarlet fever the patient may have kidney complications which will cause retinal disease. In diphtheria there may be a temporary paralysis of the focusing muscle making reading impossible in diabetes, hemorrhage, an instability of the focusing power, and a curious optic nerve affection which causes marked reduction in central vision.

In tuberculosis of the bones and general body structures, there may be an actual destruction of parts of the eye. Pulmonary tuberculosis, however, rarely causes a severe eye lesion. Syphilis causes failing vision in both the inherited and acquired types. Brain tumor is often first discovered by the eye specialist.

Prolonged close application is best performed under correct illumination. Campaigns for better lighting are most heartily endorsed but we cannot sanction the too-enthusiastic statements that such measures will eliminate either the need of spectacles or reduce the incidence of eye disease.

And, finally, to the disciples of health, the advocates of physical fitness, and the guardians of both, the physician, I urge an aggressive campaign for the prevention of ocular disease by its early recognition and efficient treatment with an urgent insistence that those who need glasses wear them to preserve their sight.

I leave a word of cheer to those with cataract, a message of hope to those with glaucoma, and an admonition of caution to those predisposed to circulatory diseases.

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WHAT THE COMMUNITY SHOULD KNOW ABOUT SURGERY

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Surgery at the time of the Roman emperors attained a high degree of perfection. Surgical instruments in particular were highly specialized, as is evidenced by the finding of over two hundred specimens in Pompeii. Surgical instrumentation developed under the Romans as the result of war injuries and gladiatorial combats, and occasionally from the dissection of executed criminals.

From the time of the Romans to the beginning of the sixteenth century no great progress was made in the knowledge of the human body. During the Middle Ages learning was the exclusive property of the Church and the clergy were forbidden to shed blood or to dissect the body. These prohibitions left the practice of surgery entirely in the hands of the so-called barbers—questionable gentlemen with bold spirits utterly unscrupulous, brazen, clever and with deft fingers. They were restricted by no code of ethics, had no social responsibility, and believed that bleeding was a cure-all for every ill.

In all of Europe at this time there was scarcely a score of trained surgeons. In the latter part of the twelfth century there was founded the College of Surgeons of

St. Côme, which from its inception waged a constant war against the barber surgeons. In 1515 the College became a Department of the University of Paris, and surgeons who studied in this school wore long robes and black hats, in contrast to the barbers who wore short robes. Later the short-robed barbers were forbidden to practice surgery without being examined by the school authorities.

Eighteen years after the discovery of America, Ambroise Pare, the creator of modern surgery, was born. He was, ironically enough, the son of a barber. At nineteen he became surgeon to Francis I, took a degree from the University of Paris as Master Barber Surgeon and served under four kings of France. He was a man of great attributes: an acute observer, a philosopher, a diligent recorder of his experiences and a man of great humanity. He raised surgery to a profession and a science.

Paré re-discovered the ligature for tying off blood vessels. He refrained from cauterization of wounds with red-hot irons. He covered them with a bland ointment, and observed that these individuals recovered more quickly and with less pain than those

WHAT THE COMMUNITY SHOULD KNOW ABOUT FAILING EYESIGHT

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Immutable unrelenting time leaves its marks on the human body as it does on all other living things

When the average person reaches the age of forty, a change takes place in his eyes, a dislike to do near work, a late afternoon or early morning headache, a tendency to hold small objects farther away, and occasionally blurred vision. Correctly fitted glasses permit close application with clear sight and without discomfort. The testing for glasses is a highly technical art and the one prescribing lenses must also be competent to render an opinion on the general health of the patient.

A complete examination includes the study of the background of the eye, the stage upon which many of the tragedies of life are enacted. It is now possible to make a photographic record which is of extreme value, for, by it the past, the present, and the future ocular health can be told.

If a patient has to change his glasses frequently, it is an indication of either a constitutional or local eye disease and calls for a searching investigation.

Widely heralded special forms of glasses have an extremely limited range of usefulness. Telescopic lenses and contact glasses are for rare conditions and will never take the place of properly fitted spectacles.

One frequent cause of failing vision is cataract. This is a clouding of the lens of the eye and may be of an isolated part, slowly progress, start and stop or rapidly involve the entire structure. Babies may be born with cataracts and children may develop them during the course of their growth, especially when undernourished. Some cataracts mature in a very short time, as for instance in diabetes and goiter. Others follow the ingestion of dinitrophenol, a drug which has an unwarranted reputation as a safe cure for obesity.

In some families cataracts appear early in life, in others, late. If the sight is poor the cataract can be removed. After the operation serviceable vision is usually restored. The majority of those who have cataracts wear proper glasses and live without fear or apprehension of the future.

By means of a special instrument, the slitlamp, it is possible to tell whether a cataract will grow rapidly or change so slowly that for years there may be scarcely any perceptible advance. I would be dere-

lict in my duty if I failed to have you understand that no form of medical treatment has ever changed the course of a senile cataract, no drug, no serum, nothing.

Glaucoma is a hardening of the eyeball. It is of such sinister force and such wide distribution that everyone should know about its manifestations. In one form there is redness of the eye accompanied by sudden loss of sight, pain, nausea, vomiting, and the symptoms of a gastrointestinal upset. If seen early and an operation properly performed, sight is frequently recovered.

The other type is unaccompanied by redness or pain but, like a thief in the night, it steals sight by gradual encroachment on the field until only the central vision remains. It is one of the most perplexing of eye diseases and calls for the best in ophthalmoscopic diagnosis and therapeutic skill. If patients are placed under treatment before the field of vision, the ability to see about, is much reduced, glaucoma can be checked.

When a patient has transitory attacks of blurred vision, he should immediately consult an eye specialist.

High blood-pressure is an example of foreordination or predestination for heredity plays the principal role in its production, onset, and course. One form is, however, preventable, that which develops in the course of pregnancy. The ophthalmologist is the one most competent to advise when the fetus should be removed for he is able to recognize the premonitory signs of approaching disaster. High blood-pressure is often diagnosed by the ophthalmologist in his routine examination of the eyes.

If we admit that man is as old as his arteries, then heredity and his physical and mental condition determines the time when poor vision will result from circulatory disease. A particular type of arteriosclerosis involves the minute blood vessels which supply the center of sight. Those afflicted are unable to read but they can see things about them and never go blind.

Pernicious habits produce poor sight. The near-sighted child who persists in reading in the dark corners of a room, the patient who uses alcohol or tobacco to excess, and the fair one who wishes to remove superfluous hair, by drugs, are all drifting on a treacherous sea where the uncharted rocks which lead to blindness are hidden from view.

WHAT THE COMMUNITY SHOULD KNOW ABOUT INFANTILE PARALYSIS

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Not a single one of the communicable diseases strikes as much terror in the hearts of fathers and mothers as does infantile paralysis. The deadly fear thus engendered is unfortunate, because it tends to break down that wholehearted cooperation and morale which must exist among parents, physicians, and public health officials, a co-operation which is especially necessary during an epidemic. Probably the most important fact which the public must know, not only about infantile paralysis but about all the communicable diseases, is that early recognition and prompt reporting of cases to the proper health authorities are the most important steps in making effective control possible.

The first of these steps is largely in the hands of the public. Parents and teachers especially will find it incumbent upon them to seek medical aid whenever there is the slightest suspicion of disease. Once competent medical aid is sought, the second step, that of reporting, will naturally follow. The more prompt the recognition and reporting, the greater are the chances of stamping out an epidemic, or at least of limiting its ravages.

The isolation of those ill and the quarantine of those who have been in contact with the sick are procedures which succeed only as an educated and enlightened public demands that they be carried out to the last detail.

If one mother in a community, who because of a fanatical belief in some metaphysical system of healing or because she accepts a neighbor's diagnosis, permits her slightly ailing youngster to mingle with other children, she may be responsible for starting a chain of cases which it may be impossible to break before many are crippled or, even worse, dead. Isolation and quarantine are scientific measures deserving of the undivided and wholehearted support of the entire community. In no disease are they more necessary than in infantile paralysis.

What is this disease, which, since the turn of the century, has invaded the New York area in three epidemics and has appeared elsewhere in our country with varying frequency and severity? This scourge of childhood and, less frequently, of adults is an infectious disease caused by a virus. A virus is a micro-organism so small that the most powerful microscopes have failed

to bring it into the range of human vision. Like many infections, the first symptoms come on quickly. These usually are fever, headache, vomiting, constipation, diarrhea or sore throat. Unfortunately the early symptoms do not help us very much because they are those seen in the infections of the respiratory or of the gastrointestinal tract. If, however, there is added as an early symptom a marked objection to being touched or handled and stiffness of the neck or back, the chances of it being infantile paralysis are much greater. Occasionally tremors of different muscle groups are seen, and pain which may vary much in severity, is present in a large percentage of cases. If paralysis does develop, it seldom occurs before the second or third day, and may even be delayed as late as the twelfth day.

The sources of all infections are human carriers and the patients themselves. The disease is transmitted by direct contact with infected persons, which must include those who are carriers of the virus, or indirectly by contact with fresh discharges from the nose, throat, or bowels of those same individuals. There is some evidence to support the theory that it may be spread by milk, but it is quite generally agreed that this is unusual and infrequent, and can be avoided if the milk is pasteurized or boiled.

From the time the virus enters the person affected until it begins to manifest its presence is ordinarily from seven to fourteen days. This is known as the period of incubation. It is not known conclusively when a person who has been infected becomes capable of transmitting the disease, but this probably occurs rather early in the incubation period and lasts at least through the first week of the disease. Because nobody is absolutely certain how long the virus remains active in the nose and throat or possibly in discharges from the intestinal tract it is not possible to give the exact length of time that isolation or quarantine should be maintained. However, it is practically certain that a patient who is kept three weeks in isolation will not be a source of danger. All children who have been exposed to a direct case and all adults, who are food handlers, should be kept in quarantine for a similar period.

Newborn babies are apt to receive immunity from their mothers but this almost always disappears by the end of the first

Read by Dr Walter P. Anderton, Director Medical Service, Knickerbocker Hospital

treated with hot irons. Thus was re-introduced to the practice of surgery the recognition of the great reparative powers of nature, so wisely extolled and exploited by the Greeks. This new era in surgical physiology has become fixed in medical history by Paré's famous expression, "I dressed him, God healed him."

For surgery to progress it was necessary to understand the various manifestations of surgical disease. This great development of surgical knowledge came from England where John Hunter, a born truth seeker, became the founder of surgical pathology. Specimens of the major surgical conditions were obtained and studied, and their safeguarding resulted in the Hunterian Museum in London.

With the names of Paré and John Hunter comes Lister, and interposed is Louis Pasteur, who developed the theory of germs as the causation in disease. Before Lister's time every surgical wound was naturally supposed to be accompanied by pus. If the pus did not flow freely it was a dangerous sign, whereas a copious discharge was considered a sign of healing and called "laudable pus." In 1867 began the story of antiseptics and absorbable ligatures. Lister and Pasteur together established the bacterial or germ theory of disease. Under the genius and personal influence of these three men—Paré, Hunter, and Lord Lister, the three greatest surgeons of all time—modern surgery was created.

During all this slow developmental period three outstanding thoughts were present in the minds of thinking physicians, and it was upon these three factors that modern surgery was created. The first was the elimination of pain, the second, the control of hemorrhage, and the third, the prevention of infection. Until these three basic conditions were met there could be no scientific surgery, although in 1809 McDowell in Kentucky had successfully performed a major abdominal operation.

Pain can be eliminated by producing anesthesia, or the pain itself may be obliterated while the patient remains fully conscious. Modern chemistry has developed a surprisingly large number of substances capable of producing anesthesia. We have local anesthesia where chemicals are injected in or about the area of the operation, and we have chemicals that can be injected into the veins and produce unconsciousness and elimination of pain. We may inject chemicals into the spinal canal and rectum, and accomplish the same purpose. We may have the patient inhale gas of many kinds and different qualities, and we have the classical anesthetic agents—ether—and rarely, chloroform. Again in the prevention

of infection we have chemical materials such as Tr of Iodine for sterilizing the skin and others for the instruments, or better still, simply boiling them. We have developed complex sterilization apparatus that sterilizes all the gauze, bandages, and drapings that are in contact with a patient during an operation. We have discovered antiseptic sera and drugs for the prevention of infection. The control of bleeding was accomplished by the discovery of the method of tying up blood vessels with silk twine and later with catgut, an absorbable material made from the intestines of sheep. By the proper application of these three outstanding fundamental conceptions it has been possible for surgeons to operate upon every area of the body, to enter into every cavity, even the heart and brain, with safety.

From the beginning of time individuals have been injured, and with great loss of blood. Many diseased conditions are associated with a similar loss of blood, and there arose the idea of transplanting in whole or in part the blood from animals or from other human beings to the sick or wounded individual. Today the operation of blood transfusion has reached a plane of absolute precision and, where indicated, great effectiveness. The introduction of a syringe into a vein of the arm of the donor and the transference of the blood into the sick individual would seem a very simple procedure. Yet in that performance there were a number of difficulties to be overcome. In the first place, the blood of various individuals was not compatible, and in overcoming this incompatibility many physicians, physiologists, and chemists were concerned. As a result of their observations and research there are four main blood groups, and generally speaking the blood of one group can be transfused into an individual of the same group, but not otherwise. The second difficulty to be overcome was that blood outside of the blood vessels "clots" in four to six minutes. To prevent this, the operation of transfusion carries the blood from the donor to the patient so rapidly that clotting does not occur.

What is the lesson to the community to be derived from these facts? It is that every invention and every discovery in the arts and sciences, if useful in the practice of surgery, is utilized. Every major discovery contributes to the usefulness of modern surgery. Every hospital contributes in teaching and in research. Every medical school and every physician also shares in making possible two factors in the safety campaign for healthful living. To make the patient safe for modern surgery, and to make modern surgery safe for the patient.

tremely small germ, so minute that it cannot be seen even with the aid of the most powerful microscope. This type of germ is scientifically known as a filterable virus. When it gains entrance to the human body it most frequently causes an inflammation of the back of the nose and throat, the larynx, and the trachea. The common symptoms of this inflammation are running nose, sneezing, sore throat, hoarseness, and cough. The acute stage of the disease usually lasts from three to five days and is generally not accompanied by fever of any degree. The symptoms of the infection, however, may frequently persist for from two weeks to a month. This continuance of the disease beyond the acute phase is commonly caused by what is termed secondary infection. Most healthy people carry in their throats, particularly during the winter months, a variety of germs that are potentially harmful. In addition to these, other disease-producing bacteria are acquired from time to time by contact with strange individuals particularly in crowds, due to the fact that germ-containing particles of the secretions of the nose and throat are expelled into the air during the process of talking or coughing. These newly acquired germs survive for varying periods of time in their new environment. Under the influence of the inflammatory process set up by the cold, these two types of bacteria contribute their injurious effects to the diseased tissues and aggravate and prolong the infection. In fact, the common complications of the cold such as sinusitis, and bronchitis, and inflammation of the cavity of the ear in children, are commonly due to such bacteria. In short, the inflammatory process in the common cold is initiated by a filterable virus which is specific, but the disease is prolonged and complications are produced by the common germs carried in the mouth or by those acquired from close contact with other people.

It is obvious that if science could bring the upper respiratory infections within the sphere of effective public health control, great benefit would accrue to humanity. In attempting to solve a problem of this kind, it is important to examine the succession of events which attends outbreaks of the disease under investigation and to attempt to break this chain of circumstances at its weakest link. The discovery, that intestinal infections are generally spread through the medium of contaminated water and food, and the control of the purity of those necessities has led to the practical disappearance in highly organized communities of such former scourges as cholera and dysentery. Here it has been possible in a relatively

simple manner to check the disease in question by breaking the line of communication. In general this is the most direct approach to the problem of the control of infectious disease. Unfortunately, the common cold is spread from individual to individual by the necessary and continuous contacts of human life. Public health authorities have suggested a number of important procedures, such as, staying at home during the acute stages of the cold, avoiding close contacts in crowded places, and protecting others from infectious secretions by covering up sneezes and coughs, but owing to the frequency of the disease and the limited disability which it causes, the methods recommended are seldom adequately carried out by the public. The fact that the cold is communicable to others by contact for at least as long as five days makes it unlikely that isolation can be practiced for so long a period of time except perhaps in the case of children. Furthermore, efforts to control the disease by attempting to develop and apply a successful form of treatment have proved disappointing. Experience of the past has taught us that once an infection is established in the human body only rarely can it be cured by medical means. This fact has led public health men to expect more benefit from preventive than from curative measures.

The failure of such public health measures as are applicable today, adequately to control the spread of respiratory infections, has led investigators to explore the possibilities of more highly specialized methods. Among these one of the most important is that of preventive inoculation or vaccination. Such a procedure has been successfully and extensively used in the control of smallpox. In order to apply such a method with any hope of success it is necessary to know the causative agent of the disease in question, and furthermore it must be possible to grow this agent in the laboratory in large quantities and in a sufficiently simple manner for general application. In the last few years both of these requirements have been met for the two most important infectious diseases of the upper respiratory tract, common cold and influenza. The fact that both of these diseases leave behind them little or no resistance to future infection with their causative agents makes the problem one of particular difficulty. Little doubt exists, however, that investigators with the new knowledge at their command will devote increasing time and effort to the solution of this problem. Let us hope that at least some measure of success will attend their efforts.

year, and the age group from one to five probably has the lowest number of those who are immune

One of the most interesting facts about the disease is that sporadic cases may occur at any time, although it is well-known that in epidemic forms the highest incidence is in the late summer and fall

The treatment of all cases of infantile paralysis must be in the hands of physicians. But the public has a part to play because even suspected patients should be isolated, the room screened if possible, and all body discharges and all clothing disinfected. Rest and fresh air will be advised, but the actual securing of these will be largely in the hands of nurses and parents

It must be admitted with regret that all measures of a specific protective nature still require much more widespread study before any guarantee of absolute safety can be given. What is true of the measures designed to immunize children against the disease applies with equal force to the use of specific serums in the treatment of the disease, once it has begun. All that can be said with certainty is that convalescent serum must be used before actual paralysis has set in, if it is to be of any value

The community's responsibility during an outbreak of infantile paralysis is a heavy one. Especially is this true in the face of an epidemic. At such a time it is particularly

necessary that a search be made for all sick children, in order that they may be examined. It must provide, working with the medical profession, for such facilities as will aid in the early diagnosis, and the establishing of a central agency for the collection and distribution of serum, if the physicians so advise. Every person in the community must follow the advice of the public health officials. All of the responsible newspapers and radio chains give adequate space and time to official announcements, and these are invariably based on genuine scientific knowledge. The community must also see that all children have the proper early treatment, which is now recognized as being so important, as well as providing for the after care of all cases which have been paralyzed. So remarkable have been the medical and surgical advances in restoring paralyzed muscles to useful function, by the use of special measures, that any community which fails to provide them for its young charges is guilty of the most shameful neglect.

Some day this dreaded disease will be conquered. The medical profession is bending all its energies in an endeavor to wipe out infantile paralysis even as it has practically conquered that former scourge of childhood, diphtheria

50 E 72 St

WHAT THE PUBLIC SHOULD KNOW ABOUT THE COMMON COLD

A. R. DOCHEZ, M.D., *New York City*

Professor of Medicine, College of Physicians and Surgeons, Columbia University

The Common Cold is the most widespread and frequent infectious disease from which human beings suffer. The distribution of the disease is world-wide and it occurs at all seasons of the year, though as a rule two major outbreaks take place each year one of which reaches a peak in late October and the other in mid-January. The mid-winter outbreak is more severe in character, is accompanied by more frequent and serious complications, and causes a greater amount of lost time from school and from work. Studies in the industrial field have shown that more than fifty per cent of the time lost from work is caused by colds and their complications

Until recent years the common cold has been considered a simple disease of the respiratory tract which because of its mildness could be conveniently disregarded. A more thorough study of this disease begins to indicate that it may be the keystone of a complex series of diseases, the causative agents of which gain entrance to the human

body by way of the upper respiratory tract. The direct relationship of colds to such dangerous maladies as lobar and bronchopneumonia is well-known. Only recently, however, has it been fully appreciated that the common cold may cause severe relapses of the chronic illnesses—rheumatic heart disease, asthma, and diabetes. The frequency with which colds are accompanied by more or less prolonged infection of the nasal sinuses makes it possible that colds are among the principal contributing causes of such apparently unrelated conditions as chronic arthritis, neuritis, and various types of inflammation of the muscles. Furthermore, colds cause a predisposition to infection with the germs which give rise to such serious diseases as scarlet fever and meningitis. These few examples show how the common cold lowers resistance to many acute and chronic diseases which are among the most serious ailments which the physician is called upon to treat

The common cold is caused by an ex-

serious disease in one or two treatments! Beware the man who has no fixed residence and who moves from one city to another! Beware especially the one who claims special knowledge that no other physician possesses! All are likely to be quacks and are not to be trusted

Many a quack depends for his success on the fact that he says that all disease is produced by one cause and that all of it can be cured by reversing that cause. If medicine is to be partitioned off into a series of specialties and cults and practiced by men who have learned only one organ of the body, science is bound to fail. No part of the human body can be detached and treated as separate from the body as a whole. Concentration on an "all or nothing" policy in the treatment of disease must inevitably lead to preposterous and exaggerated claims.

Consider a typical quack of the eighteenth century. He was named James Graham. After his name he put "Servant of the Lord, O W L." The words "Servant of the Lord" indicated that he claimed divine inspiration, and the letters "O W L." stood for the words "Oh Wonderful Love." Many a cultist has wooed his followers by putting a new accent on love. James Graham promised human beings an elixir of life which would give them eternal youth and freedom from diseases. He had a temple of healing in London. Outside the temple stood a statue of Hygeia, the mythical goddess of health, and inside the temple was a statue of Venus. You could see Hygeia for nothing, but it cost two shillings to see Venus. This is what the modern ballyhoo artist calls the "come-on." It was Barnum who said that the first thing to do was to get them in, after you got them in, you could easily sell them.

Our first great American charlatan was Elisha Perkins. He claimed that all disease was due to an electrical manifestation, and he cured disease with two electrodes about the size of a nail—one of copper and the other of zinc. It cost him about twenty-five cents to manufacture each set and he sold them for \$5. The two electrodes were drawn downward over the body. Elisha warned people against drawing them upward, claiming that this would intensify disease. He promoted the sale of these devices by the use of testimonials which he obtained from those in high places, including senators, governors, Congressmen and even archbishops. In those days the leaders of society were not wont to give testimonials. The real development of the testimonial racket came with the modern methods in advertising. The testimonial still continues to be one of the chief measures in exploiting unestablished methods for the diagnosis and treatment of human ailments.

Eventually it occurred to two British doctors to make a scientific test of the methods of Elisha Perkins. They made a device similar to that of Perkins, but they used wood instead of metal. Obviously the wood could not perform as did the metal if the condition was actually electrical. They took the wooden electrodes down to the clinics where the metallic electrodes were being employed and every other patient was treated with the wooden electrodes. Just as many got well by this method as by the original method of Perkins. When this fact was made known, tractoration, or Perkinism, disappeared from the scene. That is what usually happens when the methods of the charlatan are exposed to public gaze. The Perkins ideas still persist in electrical belts, metallic rings, in heel plates of copper and zinc which, it is claimed, will ground your rheumatism while you are walking. But increasing knowledge of the fundamental facts about electricity makes people more and more doubtful of these devices.

Physicians today know that the mind plays a considerable part in our fears of illness, in the production of illness and even in its treatment. Few persons stop to realize that it is the tendency of many common diseases to recover almost in spite of what is sometimes done for them. Almost every one thinks that he knows how to cure a common cold. You can put your feet in hot water, decorate yourself with a mustard plaster, drink vast amounts of citrus drinks, take all sorts of remedies or what the government used to say is *no good* for a cold. At the end of five or six days you are usually getting well. You are likely to credit the last remedy with the cure that has occurred. The scientific man knows that it is the tendency of the cold to recover. The scientific doctor keeps you comfortable and wards off dangerous complications like pneumonia. If you happen to be treated for a cold by a quack or a quack remedy the credit for the recovery is likely to be claimed by the quack himself or the promoters of the remedy.

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Once the quack was limited in his appeals to those whom he could reach by word of mouth as he traveled about with his horse and buggy, speaking to the populace as it assembled on the city streets. Now the old medicine man of the type of Snake Oil Cooper has disappeared. The quack today is essentially a business man. He uses the modern methods of business in his promotions. Today he reaches his public by all the means which modern advertising has developed. We hear him on the radio. He lectures in great halls. He advertises in such newspapers or magazines as will carry his advertising. His circular letters reach the prospective victim in the morning mail, and his cappers insidiously solicit his victims by whispering campaigns wherever the sick and the ailing may be assembled. The quack of today reaches his hundreds of thousands

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Remember that quackery is not confined exclusively to the medical profession. There are quacks in the law, in the ministry, in banking and in all the trades, but the quackery in the field of health is the greatest of all the menaces. Money, once lost, may sometimes be regained, but health, once lost, is regained only with the greatest of difficulty. Life, once lost, is never regained! There is no raising from the dead!

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acids and those who oppose alkalis Vegetarians attach undue evils to the eating of meat, and whole-wheat fanatics say that white bread causes cancer There is not the slightest scientific evidence to support the view that the eating of wholesome quantities of any single item of diet, such as meat, bread or any other of the fundamental foods, is dangerous

Then, too, the last twenty years have seen the rise of the plastic surgeon and beauty quack. Cosmetic operations are most commonly sought by elderly women in love with young men, by aging actresses who still wish to play ingenues, by women whose husbands have lost interest in them, by pugilists who have fought to financial success at the cost of facial continuity, and finally by foolish salesgirls, clerks, aspirants to the movies, and unemployed sheiks There is, of course, a legitimate field for the surgery of the repair of deformities, but the legitimate surgeon does not advertise, he has no "come-ons" and he does his operating in reputable hospitals

Of all the charlatans who have preyed on mankind since the earliest times, the most despicable are the ghouls who feed on the bodies of those who are dead or dying from cancer The medical profession today does not know the cause of cancer It does know that the one real hope for any patient with this condition is early diagnosis and prompt treatment either by surgery or by the use of radium and the x-rays We can point now to innumerable cases of people with cancer who have been given almost a normal life expectancy, after the diagnosis of can-

cer was made, through the benefits derived from these methods of treatment Yet throughout our country and Canada today there are charlatans who exploit serums, vaccines, caustic pastes, and mixtures of herbs and roots and vegetables which are alleged to be of specific virtue in the treatment of cancer but which have been shown by the passage of time and by scientifically controlled experimentation to be completely without merit Knowing the fear that pervades the population in relation to cancer and knowing that the people who are dying of this disease will grasp at any straw of hope which may be offered, these charlatans take even from the poor the last few pennies that have been laid aside for purposes of burial, leading them on by unwarranted promises of success

When the famous Pasteur was asked by his students for some advice to guide them in their scientific careers, he said to them, "Be skeptical" A certain amount of skepticism is your only salvation against the wiles of the quack and the charlatan Be skeptical, and when you are in doubt, ask your family doctor whose reply will be based on a knowledge of medicine and who will answer you with a statement in which you may have confidence The Bureau of Investigation of the American Medical Association has a card index listing hundreds of thousands of quacks and quackeries, of nostrums and fraudulent medicines If you are in doubt, write to the American Medical Association at Chicago The information is freely available to any one as a service of the doctors of this country for the health of the people

SLEEP

FOSTER KENNEDY, M D, *New York City*

It is truly strange that we know almost nothing of the mechanism by which sleep is produced We spend almost a third of our lives asleep and the physiology of this condition is less understood than is that of the digestion or respiration Further, the fact that we know little or nothing of the background of this state of being doesn't seem to occur even to the minds of persons who spend their lives in physiological research The technical literature is small and speculative rather than experimental We have learned however, only in the past twenty years that there is one area in the brain—a part of the hypothalamus—which if stricken with disease causes the individual to sleep usually too much, possibly twenty-two or three hours a day, in fact passes into a state of hibernation, however there may come from such an illness other varie-

ties of interference with sleep A reversal of the ordinary sleep rhythm may occur so that with dawn drowsiness supervenes, and towards evening, wakefulness takes place In such persons if the organic needs are denied—should the person persist in trying to work through the day, they do so groggy and vacillating in action and power of decision Further, I have seen disease of this small brain area do away for nine days and nights with any power or desire for sleep and in this period the man was able to work and to feel well One would like to know how to reproduce this situation artificially, it is unlikely that we shall ever make an efficient life span of more than a century, the cellular complexity of our bodies imposes mortality upon us, but I sincerely believe that a method of sleep substitution is not beyond the wit of man

likely to give credit for the improvement to the last treatment. On this natural tendency of disease the charlatan bases his claims and the promotion of his methods. Nowadays people with rheumatism scurry hither and thither from state to state, from nation to nation, trying to find some magic route to cure and giving each new treatment credit for benefit which would have occurred just the same had they remained at home. But there might not have been the same psychologic effect with the common methods of treatment employed by the family doctor.

Let us distinguish between charlatanism and quackery on the one hand and adulteration and fraud on the other. When the grocer puts sand in the sugar, when you buy wool stockings that are one-half cotton, and when the motor car that the salesman told you would run 30,000 miles has fallen apart at twenty, the dealers are not practicing quackery, they are practicing misbranding, fraud, and adulteration. But when a doctor says that he can cure all forms of rheumatic disease by twisting the feet, and when under the guise of such treatment he twists the feet for patients who are suffering from the results of meningitis and infantile paralysis, patients who are staggering to their doom with multiple sclerosis, myasthenia gravis and the shaking palsy, he is practicing a cruel and deceptive form of quackery. He knows and the medical profession knows that there is no hope in such treatment for alleviation or benefit of the conditions concerned. And those who spend their money in traveling to the shrines of quackery to receive these treatments are in most instances bestowing on the quack the money that they should save for proper nursing and reasonable care during their years of invalidism. This is quackery in its most serious form.

More amusing perhaps is that form of charlatanism which promises youth and vim, vigor and vitality to sexagenarians with accent on the "sex." Here enters exploitation of our new knowledge and our great ignorance of the glands. It is to the eternal credit of the Federal Radio Commission and the Federal Communications Division that they have barred from the air waves in the United States two charlatans who now befoul the American atmosphere with nightly communications from across the Rio Grande. I refer, of course, to those stations which regularly solicit American patronage for operations on the glands and for the use of unestablished cures for cancer. The mere fact that these charlatans can no longer broadcast their messages from American radio stations should indicate to any American listener the utterly unestablished character of their claims and the danger that is

inherent in such practices. Yet repeated representations made to the government of Mexico have failed to bring about a cessation of the blatant and monotonous reverberations that lead the senile and the suffering into the hands of these quacks. Neither goat glands nor any other glands will rejuvenate the aged. Yet the graybeards still go tottering with hands outstretched, seeking the mythical fountain of youth that Ponce de Leon sought in vain.

One of the latest developments in quackery is the psychoanalytic or psychologic quack. Out of the interests in these fields during the last twenty-five years has come a new species of pedler of psychologic treatment known as the practical psychologist and the character analyst. Their doctrines are platitudes which strike the intellect of Homo Americanus with the force of direct communications from high Olympus. Their appeal is to the fundamental desires and weaknesses of this same Boobus Americanus: his love for financial success, social prominence, and his desire for relief from vague and fancied ills. Their chief source of income is from women. In private conferences and for a few pitiful dollars, these psychologic quacks, completely uninformed concerning true psychology, attempt to advise women concerning their worries and their mental problems. Women suffering from ennui or idleness, their faces elaborated with artifices to simulate the long lost buoyancy of youth, sigh happily at the dreams and mirages that these charlatans prepare for them. They promise health and happiness, and they give a little erotic stimulation by commercializing psychology.

The credulity of mankind in regard to new apparatus is astounding. All sorts of rays, electric shocks, and vibrators are being sold to people as "cure-alls" when their uses in disease are exceedingly limited. The success of ultra-violet in the control of rickets is no indication that it will grow hair on a hereditarily bald head or make beautiful a skin that is full of pimples. Thousands of people have tried to shake their bodies into health with vibrating belts and have instead shaken loose organs that were doing pretty well anchored where nature anchored them.

The most persistent of recent quacks are food faddists. Foods are sold as health foods, as tonic foods and as vitalizing foods. We are warned against dangerous combinations, and the vitamins are promoted as producers of longevity. The wise man of today eats a widely varied diet and in that diet need fear no deficiencies. We are admonished at every turn to eat more of this or that or to confine ourselves wholly to some particular diet. We have those opposed to

acids and those who oppose alkalis Vegetarians attach undue evils to the eating of meat, and whole-wheat fanatics say that white bread causes cancer There is not the slightest scientific evidence to support the view that the eating of wholesome quantities of any single item of diet, such as meat, bread or any other of the fundamental foods, is dangerous

Then, too, the last twenty years have seen the rise of the plastic surgeon and beauty quack. Cosmetic operations are most commonly sought by elderly women in love with young men, by aging actresses who still wish to play ingenues, by women whose husbands have lost interest in them, by pugilists who have fought to financial success at the cost of facial continuity, and finally by foolish salesgirls, clerks, aspirants to the movies, and unemployed sheiks There is, of course, a legitimate field for the surgery of the repair of deformities, but the legitimate surgeon does not advertise, he has no "come-ons" and he does his operating in reputable hospitals

Of all the charlatans who have preyed on mankind since the earliest times, the most despicable are the ghouls who feed on the bodies of those who are dead or dying from cancer The medical profession today does not know the cause of cancer It does know that the one real hope for any patient with this condition is early diagnosis and prompt treatment either by surgery or by the use of radium and the x-rays We can point now to innumerable cases of people with cancer who have been given almost a normal life expectancy, after the diagnosis of can-

cer was made, through the benefits derived from these methods of treatment. Yet throughout our country and Canada today there are charlatans who exploit serums, vaccines, caustic pastes, and mixtures of herbs and roots and vegetables which are alleged to be of specific virtue in the treatment of cancer but which have been shown by the passage of time and by scientifically controlled experimentation to be completely without merit Knowing the fear that pervades the population in relation to cancer and knowing that the people who are dying of this disease will grasp at any straw of hope which may be offered, these charlatans take even from the poor the last few pennies that have been laid aside for purposes of burial, leading them on by unwarranted promises of success

When the famous Pasteur was asked by his students for some advice to guide them in their scientific careers, he said to them, "Be skeptical" A certain amount of skepticism is your only salvation against the wiles of the quack and the charlatan Be skeptical, and when you are in doubt, ask your family doctor whose reply will be based on a knowledge of medicine and who will answer you with a statement in which you may have confidence The Bureau of Investigation of the American Medical Association has a card index listing hundreds of thousands of quacks and quackeries, of nostrums and fraudulent medicines If you are in doubt, write to the American Medical Association at Chicago The information is freely available to any one as a service of the doctors of this country for the health of the people

SLEEP

FOSTER KENNEDY, M D, *New York City*

It is truly strange that we know almost nothing of the mechanism by which sleep is produced. We spend almost a third of our lives asleep and the physiology of this condition is less understood than is that of the digestion or respiration Further, the fact that we know little or nothing of the background of this state of being doesn't seem to occur even to the minds of persons who spend their lives in physiological research The technical literature is small and speculative rather than experimental We have learned however, only in the past twenty years that there is one area in the brain—a part of the hypothalamus—which if stricken with disease causes the individual to sleep usually too much, possibly twenty-two or three hours a day, in fact passes into a state of hibernation, however there may come from such an illness other varie-

ties of interference with sleep A reversal of the ordinary sleep rhythm may occur so that with dawn drowsiness supervenes, and towards evening, wakefulness takes place In such persons if the organic needs are denied—should the person persist in trying to work through the day, they do so groggy and vacillating in action and power of decision Further, I have seen disease of this small brain area do away for nine days and nights with any power or desire for sleep and in this period the man was able to work and to feel well One would like to know how to reproduce this situation artificially, it is unlikely that we shall ever make an efficient life span of more than a century, the cellular complexity of our bodies imposes mortality upon us, but I sincerely believe that a method of sleep substitution is not beyond the wit of man

to encompass. After all Thomas Moore told us that the best of all ways to lengthen our days is to take a few hours from the night! It is but an interruption of our happy consciousness. The sense of wonder is the yardstick, the measurement of our aging, if it be alive we are young, and if it be not, we die though we be but twenty years a-growing. So we live by as much as we feel, as we think, as we act,—and sleep kills or almost kills all these. So perhaps it is an unconscious wisdom which makes us ignore the mechanism of our sleeping, a wishful thinking, which will be displaced and give rise to a knowledge of the secret of wakefulness and conscious living.

Further, the centers in the midbrain which have to do with this vital periodicity in our living are intimately connected with important centers of metabolism for control of interchange of tissue and necessary chemicals. The frequent association of abnormal lethargy with obesity is evidence of a close relationship between pathological sleep and metabolic abnormality.

The French—shrewd and thrifty folk—say "qui dort dine"—he who sleeps, eats, and undoubtedly the wastage of material is less in our sleeping than in our waking activities. Further, the temperature falls in sleep, but should the external temperature fall to a point threatening a hibernating animal, that animal awakens.

We have heard often the old phrase that beauty sleep is the sleep before midnight. I do not know quite the meaning of this aphorism but it would seem that physiological knowledge can support its idea. We do not just sleep when we are fatigued, we sleep to prevent fatigue. If we only sleep when exhausted, we have to repair a brain cell that has been temporarily more greatly damaged. Yes, fatigue makes the look of the cells in our brains different, they grow shapeless, swollen, and dim in pattern when thoroughly tired. Therefore if we put them in the hands of Nature's sweet nurse early enough, before extreme changes have occurred, we get better and quicker repair—a sleep that brings health and beauty to other tissues.

All the same, we run the risk these days of doing what Christ told us not to do—of taking too much thought for the morrow—of being over solicitous of ourselves in hygienic affairs. It is certain that many people get panicky in an absurd manner if sleep fails them somewhat. They think their reason will topple unless they're allowed to lie unconscious as Crocodiles for a full third of each twenty-four hours. I would assure and reassure such anxious ones that Nature will impose on them what sleep they need—and that Morpheus will gather them in be-

fore any extremity be reached. Many elderly people complain of early wakefulness—they waken at four in the morning—they may even complain at six—they would sleep socially, not on their own terms but in terms of those who serve them. They don't know what to do with the hours that must pass before others are up and about. This is surely unwise behavior—a child must sleep much, a man much less, and an old man very little. The old burn less than they did in younger days, so they have less wastage to repair, let them not sleep in the terms of their younger selves but in terms of their own serenity. Their lesser need of sleep adds to their living time which runs short. They should get up, drink a thermos of coffee, throw a match at the fire, start writing letters or reading undisturbed by an importunate and over busy world—only then in those early hours are they the Masters of their Fates and the Captains of their Souls.

During the retreat of the Fifth British Army in March 1918, some of the soldiers were so exhausted that sleep fell on them like a coma. I used to look in them for the position of the eyeballs in sleep—for they would not waken when I raised their eyelids with my fingers. I began to practice putting my eyes, by will, in this position of sleepfulness and found that a few seconds later I felt sleepy and yawned—an automatic associated reflex over which I had no voluntary control. Ever since, I have found this trick a useful one with which to woo slumber, especially when combined with voluntary relaxation of muscles in the limbs, neck, jaw, and tongue—these last almost always forgotten,—don't eat solids for two or three hours before sleep time—some stewed fruit, hot toddy, a glass of ale, or better still hot milk are all helpful. The other requisite for sleep is a refusal to think in bed. Having relaxed all your muscles, try to imagine yourself looking down a long hollow barrel—like the shooting gallery of a country fair—which is ended far away by a white target disk lighted from behind. If you succeed for a very short period in preventing images or ideas from crossing that disk you will find yourself quickly self-hypnotized and drop into unconsciousness—an occasional failure in this technic need cause no discouragement. For again I would remind you that while at present we need this little death in life, it's not really all it's said to be—much of it is really a terrible waste of time. I hope we may find some good way out of part of it at least, and finally I would congratulate those who are lucky enough now to be able to live healthy, longer, by sleeping less.

WHY ORGANIZED MEDICINE

IAGO GALDSTON, M D, *New York City*

Executive Secretary, Medical Information Bureau, New York Academy of Medicine

Like woman's work the doctor's work is never done. But whereas woman's work sooner or later becomes fairly routinized, that of the doctor never congeals into a fixed pattern. If it does then he is quickly outmoded—he falls behind the times. For of all the so-called learned professions, that of medicine is most mercurial. "Law," Osler said, "constantly looking back, has its forms and procedures, its precedents and practices. Once grasped the certainties of divinity make its study a delight and its practice a pastime, but who can tell of the uncertainties of medicine as an art?" Hardly a year passes but some advance is made in our science, an advance which not only adds to the knowledge body of medicine, but which frequently necessitates the revision of fundamental concepts, the unlearning of what was originally acquired at the cost of much labor.

Consider for example the revolution created by the discovery of insulin, and more recently by the introduction of liver treatment for pernicious anemia. The repercussions from these literally explosive discoveries have not yet spent themselves. For apart from the fact that we now have two new means for the treatment of heretofore practically incurable and fatal diseases, we also have a large body of new facts concerning the underlying disease mechanisms, facts which are refashioning our theoretical and practical concepts of nutrition and metabolism. And what need we say concerning the discovery of vitamins, or of fever therapy, or the discovery of the female sexual hormone, of the advances made in the study on the relationship of emotional disturbances to the so-called functional diseases. The public press and the radio daily carry notices of the progress made in these fields. What is not so patent nor so public is how these advances are attained, and their effects on the actual practice of medicine. Behind the scenes there is operative what we vaguely term organized medicine, an instrumentality which ties together, which guides, educates, and regulates the practitioners of medicine. I wish it were possible for you to see at first sight how organized medicine functions. Start for example with your local so-called county medical society. Practically every county in the United States has its medical society. Every medical graduate who is ethical in his practice is eligible for membership, nay more, he will be urged to belong and it's a poor or

odd man who chooses to stay outside the fold. And what does the county society do? Well, probably its first activity is to maintain a library. No doctor could possibly own and house all the periodicals, books, reports, etc., for which he had need. In the county society's library the profession's resources are pooled and are thus made available to every medical man. In many communities the library is open not only to members, but to non-member physicians, internes, nurses, public health workers, and to the general public.

Next to the library come the regular and special medical meetings. Here doctors foregather to compare notes, to discuss disease causation, diagnoses, treatment, and disease prevention. Sometimes some well-known authority is invited to address the county membership on his specialty, in other words, to give to his fellow practitioners the benefits, the fruits of his years of devoted study, experimentation, and experience. At other times some local Hippocrates will stand up to lecture his contemporaries on some matter concerning which he believes he has a message to deliver. Here he runs the gauntlet of his best friends and severest critics. And eager as men are to be on the program, so eager are the rest to take a pot shot at them. At these meetings the crude ore of theory and experience are fired in the crucible of critical review and discussion—and I can assure you from personal experience that the heat of debate is such that what is not gold is soon reduced to ashes, which are not infrequently poured with scorn upon the head of the speaker.

But do not gather from this that county meetings are a sort of Roman holiday, like the initiation ordeals at the lodge. These inquisitorial discussions are a safeguard for the profession and the public. For in medicine no discovery is valid until it has been confirmed by numerous investigators repeating the work of the claimant. The greatest of medical men have been wrong in some things medical. The great Robert Koch, he who discovered the germ of tuberculosis and that of cholera, also believed he discovered a cure for tuberculosis. It took five years and the independent study of many men in many parts of the world to show that tuberculin was not a cure for tuberculosis. How many of our very best research men and clinicians have had the mistaken idea that they had discovered the

cause or the cure of cancer. Some day, and at that possibly soon, some one or more likely a group of men will solve the riddle of cancer. But you may be certain, before that most eagerly hoped-for news is given the world, its authenticity will have been checked, double checked, and more. We have been wrong so many times before.

But back to our county society. Some meetings will be devoted to public health. If the community's milk is poor, if its waters are polluted, if the insect pest is too troublesome, or ragweed too rampant, if too many cases of diphtheria are found to occur, or the school children's teeth are bad, or the maternal mortality is high, you may be certain some one will speak up. A meeting will be held, a committee will be appointed, and sooner or later, something will be done. Let me not seem to claim greater social consciousness for medical men than is found in other professions. It's rather a matter of meter—the doctor daily deals with man and his environment. If he is more commonly concerned than say the lawyer or the minister is with noise abatement, the smoke nuisance, adulterated foods and the like, it is because in his daily round he is forced to take notice of them, even as the tailor sees the missing buttons and the shoemaker the run-down heels.

Finally, and that only because time is limited, we come to the matter of ethics. Organized medicine is governed by and governs through a code of ethics self-imposed, self-administered. No professional man has more privileges accorded him than the doctor. From the caduceus on his car, which allows him parking privileges beyond the common run, to his professional secrecy which may be invaded only by order of the court, the doctor is endowed with prerogatives denied the others. This is no gratuitous honor conferred on the doctor. The privileges come as the obverse of his responsibilities. But whatever their source, the doctor does have uncommon privileges, and these must be safeguarded by professional supervision, lest they be exploited.

Since the most ancient of times medical men have been governed by a code of ethics. The precepts differed accordingly as the code was Egyptian, Greek, early Christian or medieval, but through all there ran the guiding moral conception of the duties and obligations of the physician. The Oath of Hippocrates, framed in days when Greek medicine was in its glory, is the pledge of

the medical man today, given as he is invested with the dignity of his calling.

"I swear by Apollo the Physician," so runs the Oath, "and Aesculapius and Hygeia, and Panacea, and all the gods and all the goddesses—and I make them my judges—that this mine oath and this my written engagement I will fulfill so far as power and discernment shall be mine.

"So far as power and discernment shall be mine, I will carry out regimen for the benefit of the sick, and will keep them from harm and wrong. To none will I give a deadly drug, even if solicited, nor offer counsel to such an end, likewise to no woman will I give a destructive suppository, but guiltless and hallowed will I keep my life and mine art.

"Into whatsoever houses I shall enter I will go for the benefit of the sick, holding aloof from all voluntary wrong and corruption, including venereal acts upon the bodies of females and males whether free or slaves. Whatsoever in my practice or not in my practice I shall see or hear, amid the lives of men, which ought not to be noised abroad—as to this I will keep silence, holding such things unfitting to be spoken.

"And now if I shall fulfill this oath and break it not, may the fruits of life and of art be mine, may I be honored of all men for all time, the opposite, if I shall transgress and be forsworn."

To this ancient pledge have been added such ethical precepts as the exigencies of modern times require, but the spirit remains the same. And this spirit is embodied, nurtured, and preserved by that fraternity of practitioners whom we have learned to collectively call organized medicine. The doctor has been lampooned by the clown and the wit. He has been eulogized by the best of men. But it is a fact that dealing as he does with life and death, practicing an art wherein, as Hippocrates observed, "Experience is fallacious and judgment difficult," he needs the sustaining fellowship of his confreres, to teach and to learn, to compare notes and to match experiences, to hold common counsel on what concerns the profession and what affects mankind, and mostly so that the great honor and the great responsibilities of the physician be never lost sight of. For it is true, as it was said in ancient times that "Men in no way approach so nearly to the gods as in giving health to men."

District Branch Meetings

Scientific Program of the thirtieth annual meeting of the Sixth District Branch of the Medical Society of the State of New York will be held at Willard Straight Hall, Cornell University, Ithaca, Thursday, September 17

MORNING SESSION

10 00 A M Eastern Standard Time

Discussion of New York State Syphilis Program, William A Brumfield, Jr, M D, State Department of Health, Albany Discussion opened by V A Van Volkenburgh, M D, Ithaca.

"Diagnosis and Treatment of Anal Abscess and Fistula," John C M Brust, M D, Syracuse

Colored Movies of Heat Treatment of Gonorrheal Infections, Stafford L Warren, M D and Charles M Carpenter, M D, Rochester Discussion opened by Stewart

S Piper, M D, Elmira
Luncheon

AFTERNOON SESSION

Addresses by Floyd S Winslow, M D, President of the Medical Society of the State of New York, David J Kaliski, M D, Chairman of the Workmen's Compensation Bureau, Peter Irving, M D, Secretary of the Medical Society of the State of New York

Biggs Memorial Hospital—A Model Demonstration of Physical Plant and a Discussion of the Policy of the Hospital, John K. Deegan M D, Physician in charge, Albany

Diseases of the Lungs Chevalier Jackson, M D, and Chevalier L Jackson, M D Philadelphia, Pa. Discussion opened by Ethan F Butler, M D, Ithaca

Entertainment will be provided for the ladies

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10 00 A M Eastern Standard Time

Floyd S Winslow, M D, President, Medical Society of the State of New York, "Progress of the Society"

David J Kaliski, M D, Director Workmen's Compensation Bureau, Medical Society of the State of New York, "Problems and Progress of the Bureau"

Frederic E. Elliott, M D, Chairman Committee on Economics, Medical Society of the State of New York, "Current Medical Economics"

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(The presentations of Doctors Winslow, Kaliski Elliott, and Irving will be open for general discussion)

Arthur Krida, M D, Chief Orthopedic Surgeon, Bellevue Hospital, New York City, "Surgery of the Knee Joint" Discussion will be opened by Edward T Wentworth, M D, Rochester

Harry Worthing, M D, Superintendent, Willard State Hospital, Willard, N Y, "Announcements"

1 00 P M—Luncheon (75 cents)

AFTERNOON SESSION

2 00 P M

Ross E Herold, M D, Clinical Director of Psychiatry Willard State Hospital, "Dry Clinic."

Edward G Winkler, M D, Buffalo, "Miscellaneous Procedures in Gynecology"—a presentation of various office procedures and the technic of the "Watkins Interposition Operation" (moving pictures—one hour) Discussion will be opened by A James Bennett, M D, Auburn

W J Merle Scott, M D, Rochester, "The Differentiation of Benign and Malignant Lesions in the Gastrointestinal Tract." Discussion will be opened by Phillip W Skinner, M D, Geneva

POSTPONEMENT NOTICE

The first international conference on fever therapy, originally scheduled for the end of September, 1936, has been postponed because of numerous requests, to permit more time for the preparation of material The new dates set for this Conference are March

30 to April 2, 1937 The sessions will be held at the College of Physicians and Surgeons, Columbia University

Further information may be obtained from the General Secretary, Dr William Bierman, 471 Park Avenue, New York City

cause or the cure of cancer. Some day, and at that possibly soon, some one or more likely a group of men will solve the riddle of cancer. But you may be certain, before that most eagerly hoped-for news is given the world, its authenticity will have been checked, double checked, and more. We have been wrong so many times before.

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2 00 P M

Ross E. Herold, M.D., Clinical Director of Psychiatry, Willard State Hospital, "Dry Clinic."

Edward G. Winkler, M.D., Buffalo, "Miscellaneous Procedures in Gynecology"—a presentation of various office procedures and the technique of the "Watkins Interposition Operation" (moving pictures—one hour). Discussion will be opened by A. James Bennett, M.D., Auburn.

W. J. Merle Scott, M.D., Rochester, "The Differentiation of Benign and Malignant Lesions in the Gastrointestinal Tract." Discussion will be opened by Phillip W. Skinner, M.D., Geneva.

POSTPONEMENT NOTICE

The first international conference on fever therapy, originally scheduled for the end of September, 1936, has been postponed because of numerous requests, to permit more time for the preparation of material. The new dates set for this Conference are March

30 to April 2, 1937. The sessions will be held at the College of Physicians and Surgeons, Columbia University.

Further information may be obtained from the General Secretary, Dr. William Bierman, 471 Park Avenue, New York City.

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested

Kings County

NEW YORK STATE does not protect cancer sufferers from treatment by "irregular" physicians, the "heartless parasites" of the medical profession

This charge is made by Dr John E Jennings, director of the new Brooklyn Cancer Institute

"The State so far is unable to guard its people against the incompetent practice of medicine," Dr Jennings told a Brooklyn *Eagle* reporter who interviewed him in his offices at 23 S Portland Ave

"The machinery is set up to deal with quacks who treat cancer with promises and salves but no serious consideration has been given to prevent them from practicing their trade. The medical profession as a whole cannot deal with them, since it is not asked to prescribe for the State or the community, but for individuals only"

Dr Jennings was enthusiastic over the possibilities of the new cancer institute in fighting the disease

The children's building at the Kings County Hospital is being remodelled with WCA and city funds for the sole use of the Cancer Institute, he revealed The unit will accommodate eighty to one hundred cases It will be outfitted with the latest equipment not only for x-ray, surgical, and radium treatment, but also for research Dr Jennings will head a staff of fifty

"As a rough estimate, 3,000 cases are certified to the Health Department each year as dying of cancer in Brooklyn," Dr Jennings said "Conservatively speaking, two-thirds of these are indigent Our small hospital will have no relation to the amount as a whole, but we hope to care for many through Commissioner Goldwater's expansion of our social service work"

TWO DOCTORS AND TWO GRADUATE NURSES were held on Aug 18 on charges of performing illegal operations while Brooklyn authorities investigated the "biggest ring of abortionists" in that borough and charged an illegal hospital was operated at 4746 Ocean Ave

Records of the institution were seized They contained the names of hundreds of patients The prices charged for the operations ranged from \$75 to \$300 From January 1 to August 1, according to the records, the institution had \$5,618 worth of business

DR THOMAS MORTIMER LLOYD, eighty-two, who formerly for forty years practiced medicine in Brooklyn, died on Aug 21 of heart trouble in his Summer home on Academy Lane, Bellport, L I Prior to his retirement from active practice ten years ago, Dr Lloyd had been associated with many Brooklyn hospitals

Monroe County

THE WILL OF Dr Ira T Johnson, of Rochester, who died on Aug 4, at the age of seventy-three, wipes out all unpaid bills of his patients for professional services The unusual paragraph in the testament reads

"I direct my executors to cancel and discharge as fully paid any and all accounts due me for medical or surgical treatment rendered by me to any and all of my patients"

His estate is estimated at \$175,000

Nassau County

THE SEPTEMBER MEETING of the Medical Society of the County of Nassau will be held on the 29th at the Nassau County Bar Association Club House at Mineola

THE *Nassau Medical News*, organ of the County Medical Society, suggests in an editorial on "Sickness Taxation"

Decidedly we want no sickness taxation even if it is disguised under the more euphemistic title of Health Insurance Election is just ahead of us, the medical profession might with considerable profit inquire of the various candidates for office just what is their attitude toward this threat against the pocketbook as well as health of our workers

New York County

APPEARING BEFORE BUDGET DIRECTOR Rufus E McGahen, Health Commr John L Rice on Aug 13 requested a departmental allotment of \$5,867,664 for next year, an increase of \$1,483,273 over the 1936 appropriation

This sum must be granted if both the present program and new projects contemplated by the Health Department are to be conducted with the required efficiency, the commissioner explained He considered the increase an investment rather than an expense

"The budget of the Health Department might readily be doubled to give full service,

and the results in such medical service would be an investment rather than an expense," Dr Rice said.

Heading the list of new health agencies planned by the department is a pneumonia service for which Dr Rice requests an appropriation of \$100,000.

This service, it was said, would make possible the distribution of serums to hospitals and physicians combating pneumonia.

Dr Rice claims proper distribution of this serum would greatly curtail the city death rate. Pneumonia causes approximately 6,000 deaths in New York City every year.

The sum of \$35,700 was asked to finance a detailed survey of tuberculosis conditions particularly in Harlem where the disease is most prevalent. X-rays of those believed to be tubercular would constitute a basic feature of the survey.

The commissioner revealed plans for the construction of four new health centers in 1937. These, he explained, are part of a ten-year program which by 1945 is expected to give thirty such centers to the city.

He explained the need for the establishment of additional clinics and the expansion of existing clinics devoted to the diagnosis and prevention of tuberculosis and social diseases.

A total of \$20,600 is requested for the equipment of twelve new baby health stations, seven new dental clinics, and five new eye clinics.

DR CHARLES A. ELSBERG, chief of the surgical service of the Neurological Institute was honored on his sixty-fifth birthday on Aug. 24 at a tea given by his colleagues of the medical staff at the institute.

Hostesses of the occasion were Mrs. H. P. Davison, vice-president of the board of trustees and Mrs. Courtlandt Nicoll, a member of the board. Guests included members of the board, doctors, nurses, and officials of the institute and many noted surgeons and physicians.

Dr. Leo M. Davidoff presented Dr. Elsberg with a volume of the Bulletin of the Neurological Institute, called "The Elsberg Anniversary Volume," which includes forty original articles by Dr. Elsberg and his associates.

Other speakers were Dr. J. Bentley Squier, Dr. Frederick Tilney, Dr. Cassius Watson and Dr. Dudley Roberts.

Niagara County

THE ANNUAL OUTING of the Niagara County Medical Society was held on Aug. 19 at Lookout Point Golf and Country Club, Fonthill, Ont. Dinner was served, basketball, quoits, and other sports were scheduled. About eighty members were in attendance.

DR C. W. GEORGE, Secretary of the Medical Society of the County of Niagara, reports that the September meeting was held on the 8th at the Lox Plaza Hotel at Lockport. Dr. James K. Quigley, of the University of Rochester Medical School, read a paper on Cesarean Section.

Oneida County

REVISION OF THE CONSTITUTION of the Utica Academy of Medicine will be considered at the October meeting.

THE ROME HOSPITAL medical staff, in a report signed by Drs. William B. Reid, John E. Groff, and Dan Mellen, on request of the board of trustees of the hospital, on Aug. 20 recommended to Mayor Ray Armstrong the construction of a new one hundred-bed hospital as a Public Works Administration project.

The report recommends

That the City of Rome construct a new 100-bed hospital.

That a grant of \$135,000 be requested from the Federal government.

That a loan of \$165,000 be requested from the same source with permission to sell our bonds in the open market to the best bidder.

The physicians informed Mayor Armstrong that the proposed plan would not appreciably increase city taxes, that the city indirectly is paying for PWA projects elsewhere and that no special election is needed to carry out the program.

Putnam County

DR JOHN T. JENKINS, secretary of the Putnam County Medical Society, reports that the society met at the Carmel Country Club on Sept. 2, and listened to a medico-legal program. The guest speakers were Judge James W. Bailey and District Attorney John P. Donohoe.

Queens County

DURING THE WEEK OF September 29 the Medical Society of the County of Queens will hold its Annual Meeting in conjunction with the Queensborough Tuberculosis and Health Association.

A particular feature of this meeting will be an exhibit on Tuberculosis which will include the history, development of the disease, method of prevention, and methods of cure, prepared for lay people and this exhibit is to be open during the entire week. The exhibit will include models, pictures, posters, actual bacteriological equipment, books, and magazines and will be constantly attended by demonstrators to explain the exhibit. The exhibit is being widely advertised by direct house to house.

advertising by various agencies and by radio talks each week, and a large representation of the public of Queens County is expected to attend

THE EXECUTIVE BOARD of the Queens County Cancer Committee, a branch of the American Society for the Control of Cancer, mapped plans for an active fall and winter season at its meeting in August in the Medical Society Building, 112-25 Queens Blvd, Forest Hills

Letters are being sent by the committee to 150 schools and a large number of mothers' clubs, church organizations, and civic and political groups in Queens offering speakers from the Queens County Cancer Committee in its educational campaign

Suffolk County

AT A RECENT MEETING of the Suffolk County Medical Society a resolution providing for a fee of \$5 for examining persons suspected of driving cars while intoxicated was unanimously adopted

It is pointed out in the resolution that heretofore a widely divergent fee was

charged and that the services of physicians in making these examinations and issuing certificates are partly voluntary and not compulsory and

"Whereas, The inconvenience and frequently extended court hearings resulting from the rendering of certificates of intoxication are a serious interference to the active practice of medicine, therefore be it

"Resolved, That the Suffolk County Medical Society go on record as favoring a minimum fee of \$5 for all such examinations whether or not a certificate is rendered and that a copy of this resolution be mailed to the Supervisors of each township and the Mayors or other heads of village governments"

Tioga County

DR. IVAN N PETERSON, Secretary of the Medical Society of the County of Tioga, reports that the Fall Outing Meeting of the Society will be held Sept 29, at Waverly. This will be a dinner meeting to which the ladies are invited and will be entertained by a musical program and an entertainer. The business to be transacted is the nomination of officers for 1937

PERILOUS FUMES OF CHROMIUM PLATING

An added danger to workmen in the toxic fumes given off in chromium plating, an industry introduced in 1927, was revealed on Aug 26 by Dr Lawrence T Fairhall, Assistant Professor of Physiology at Harvard, in an address before the health symposium at the Harvard School of Public Health

Painful skin afflictions, known as "chrome ulcers," caused by the action of compounds of chromium on broken places in the skin, were said to be a dangerous result of the great increase in chromium plating

More than half of the men engaged in the industry, Dr Fairhall declared, are also suffering from perforation of the membrane of the nose caused by the fumes inhaled while at work. These afflictions were said to be difficult to cure and take months to heal

"Dust injury from exposure to chromium

in industry," he stated, "is largely confined to dust from handling chromates or to spray from chrome-plating vats. Other processes in which workers are affected are those in which the skin comes into contact with a liquor as in tanning vats or in dyeing, rather than exposure to a dust."

The chromium worker is exposed to spray or mist carried into the air by bursting bubbles over the plating vats, he said, adding that because of the rapidity with which ulcerations appear, the labor turnover in this industry is said to be high

Dr Fairhall's address was on the general subject of poisonous dusts and fumes. He declared that by inhalation the entire circulatory system may be involved, whereas poisonous substances in the intestines are blocked by the kidneys and liver

DEPENDS ON THE SEX OF THE MAN

Quoting a statement that "a healthy well-nourished man can live from fifty to seventy-five days without food, provided he is not exposed to severe cold, avoids physical work, and keeps his mental calm," the

Medical Record remarks in an impressive display of sagacity that "it may thus be inferred that the length of time during which a man may live without food depends on height, weight, age, and sex"

A surgeon was forced to resort to the courts to collect his fee from a recalcitrant client

The counsel for the defense brought out the fact that the operation was performed in fifteen minutes

"The labor of fifteen minutes, then, is that for which you ask one hundred and fifty dollars?"

"No," the surgeon replied, "I ask it for the knowledge of a lifetime."—Commentator of the Owensby Clinic, Atlanta, June, 1936

Medicolegal

LORENZ J. BROSNAN, ESQ

Counsel, Medical Society of the State of New York

Malpractice—Plaintiff's Failure to Prove Negligence

Recently the Court of Appeals in a nearby jurisdiction exonerated a physician of charges of malpractice in a typical case in which the claim was made based upon the treatment of a fracture.*

The plaintiff in the case was a single woman employed as a typist who brought suit against Dr. B. charging in her complaint that he had been engaged to treat a fracture of the bones of her left arm, but that he had improperly set the fracture, and had improperly removed the splint from her arm and discharged her at a time when the fracture was not properly set or healed.

Upon the trial of the action the plaintiff described having been injured when a street car on which she was riding came into collision with a truck. She had promptly consulted a Dr. L. who had treated her on certain occasions, and then ten days after the accident, she claimed to have become dissatisfied with his treatment, at which time she consulted Dr. B. She did not tell Dr. B. about the previous treatment, but he took x-rays and reported to her that "the end of the bone was broken off." The arm was set and wooden splints applied from the elbow to the wrist. The doctor took no further x-rays of the arm. According to her testimony, the plaintiff about three weeks after first visiting Dr. B., told him of an accident to her right arm some years before Dr. B. she said, thereupon told her that she had got the arms mixed and that the fracture shown in the x-ray was an old fracture. He then took off the splints and discharged her. She claimed that since her alleged accident she had been unable to operate a typewriter. She also told of consulting other doctors at a considerably later period who had administered baking and massage.

Cross-examination elicited from her the fact that Dr. L., a specialist in orthopedic work, had not treated her for a fractured arm but for contusions and lacerations. She also admitted that before Dr. B. discharged her a second set of x-rays was taken by certain roentgenologists.

The plaintiff called as a witness a certain Dr. W. and it appeared that he had made certain examinations of her nearly three years after Dr. B.'s treatment. He said that he found no difficulty in determining the

presence of a fracture, and that it was at the end of the ulna, but he could not say definitely how old it was. He conceded that it might have been from five to twenty years old. Dr. W. was asked to assume that there was a fracture when Dr. B. saw the case, and upon that assumption he testified that splints or a cast should have been applied, x-rays taken to check on the position, and the splints or cast allowed to remain for from four to six weeks. He testified that assuming the splints were removed at the end of three weeks, the plaintiff should not then have been discharged as cured.

On cross-examination Dr. W. further conceded that the x-rays showed a fracture which might have occurred years before the claimed accident, but he insisted that on Dr. B.'s x-rays, the arm at that time required a splint or cast, although he was somewhat vague as to the length of time the cast or splint should remain in place.

Dr. B., the defendant, took the stand and gave his version of the case. He described finding a condition of swelling above the wrist with some thickness of the wrist. He had, he said, continued to treat the case for about a month at the end of which time the plaintiff could move her wrist in all directions. Dr. B. gave the opinion that there was no fracture as recent as the alleged accident but that there was an old fracture which was a matter of years or months, but not of days.

Dr. L., who had preceded Dr. B. in the treatment of the patient, admitted when called as a witness that he had diagnosed a contusion on the forearm and had treated her for about ten days, applying bandages.

The roentgenologist to whom Dr. B. had referred the plaintiff gave testimony to the effect that x-rays taken in his office three weeks after the plaintiff's "accident" had revealed an old Colles' fracture of the left wrist and a normal right wrist.

Certain other doctors were called by the defendant all of whom supported his version of the problem, and expressed the opinion that the x-rays and history of the case showed that the fracture was an old one and required treatment for no longer a period of time than the defendant had actually accorded to it.

At the close of all the evidence a motion was made on behalf of the defendant doctor

*Wilson v. Borden, 32 Fed. 2nd 394

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Across the Desk

Is the Medical Profession "Too Conservative?"

THIS CRITICISM PROBABLY STARTED when the first really scientific medical "dawn-man" refused to endorse the hocus-pocus of the tribal voodoo and mumbo-jumbo performers. And it has kept right on down to the present day. It is the main stock-in-trade of every "irregular healer," and of every pharmaceutical manufacturer who cannot get his wares accepted by the official authorities of organized medicine.

"The doctors oppose me because they are jealous of my success," says the quack "healer" while the drug manufacturer charges that "the doctors are too conservative and backward to recognize my marvelous discovery." The continuous dinging of this complaint into the public's ear of course could not help making at least some impression and credulous people here and there swallow it whole. A few weeks ago, even a staff writer in a Tennessee newspaper came out with an article taking the medical profession to task for its conservatism and slowness in accepting new ideas. Ask the ordinary man in the street what he thinks about it, and you will find more than a few who believe that the profession tends to lag a little behind the rapid advance of scientific progress.

Everyone within the profession knows that exactly the opposite is the fact, but the problem is to convince the public of it. Medical writers and radio speakers have a subject here ready to their hand, and the message of truth is timely and needed. A striking instance of the profession's readiness to adopt a new discovery was its prompt acceptance of insulin, as soon as its value was proven. Liver extract for anemia, too, was welcomed the moment it proved its worth. In fact, instead of being backward, the profession occasionally errs in being too eager, as in its use of vaccine for infantile paralysis. In such a case, it is frank and honest in acknowledging its error. On December 27 last Dr. William Hallock Park said, as quoted in these pages:

"I am still hopeful, but no longer confident, about the ultimate success of any vaccine to prevent paralysis."

Contrast that with the persistent claims of the charlatan, who keeps on proclaiming miraculous cures long after his remedy has been proved worthless.

The Profession is merely "from Missouri"



What is more, instead of blocking progress, the profession on the contrary continually pushes and encourages research and discovery. The A.M.A. gives awards and pays money every year to men who produce finds that are new and valuable. An entire department, the Council on Pharmacy and Chemistry, does nothing else but investigate new remedies, promptly approve those that are of value, and disapprove those that are not. Fraudulent claims in advertising get a sharp crack over the knuckles. What more could Mr. Critic ask? The Council, too, has not hesitated to enter the courts, like the humblest citizen, when its action has been challenged, and to date it has not lost a single case even before a jury of laymen. There you have a record to stand four square against all the winds of criticism from the foes of organized medicine.

There is something symbolical, perhaps in the fact that the annual meeting of the A.M.A. this year was held in Missouri. The profession "has to be shown." It is "from Missouri," when it comes to accepting new remedies. The ordinary man can understand and approve a thing like that. Anybody in the world can see the need of care and caution in testing the literally hundreds of new remedies brought out every year, some good, some bad, many of them touted with wild claims that run beyond all reason. The quack cancer "cures" alone would wreak untold havoc if no body existed to curb them.

The very drugs used daily by the physician are capable of great harm in unskilled hands, and some authority is needed to weed out the bad compounds from the good. "The most effective way to destroy progress," truly remarks the editor of the *Journal of the Tennessee State Medical Association*,

for a directed verdict, and the motion was granted by the Court. An appeal was taken from the judgment. The Appellate Court after considering the case affirmed the ruling of the lower Court, thereby finding that the evidence did not justify a submission of any issues to the jury.

In so finding the Court said in its opinion

In the present case all the medical testimony is to the effect that the injury of which plaintiff complained when she consulted Dr. B. involved an old Colles' fracture. Dr. W. for the plaintiff, testified that "fractures are always put up in splints or a cast." In his opinion the splints in the present case should have been allowed to remain on from four to six weeks. Assuming that the splints were allowed to remain on only three weeks, he did not think plaintiff should have been discharged as cured. The doctor did not state what further treatment plaintiff should have received before being discharged. While he ventured the suggestion that "an operation might have helped her" he admitted that he would not have operated. The nebulous character of Dr. W.'s testimony is apparent. He states that he would have set the arm with splints or a cast and allowed the splints or cast to remain for some time. That is precisely what was done. While in his opinion the splints should have been allowed to remain on from four to six weeks, other surgeons, equally skilled, testified that it would have been unwise to have left the splints on longer than from two to three weeks.

*There is no dispute that the splints were taken down once a week and the arm examined. It also clearly appears that before the splints were finally removed x-ray pictures of the arm were taken by experts in that art, and those pictures are in evidence. When these pictures were taken, the splints had been on for more than two weeks. It is significant that there is no testimony that these pictures disclosed anything that would form a basis for a charge of negligence or unskillfulness on the part of the defendant. Plaintiff's evidence may have tended to prove that her arm upon her discharge by defendant was in an unsatisfactory condition, but assuming it did that would establish "neither the neglect and unskillfulness of the treatment, nor the causal connection between it and the unfortunate event." All that was required of defendant in undertaking to treat the plaintiff was that he exercise the ordinary care and skill of his profession. * * * Plaintiff alleged lack of skill and negligence. She proved neither.*

Amputation of Leg

A man about forty years of age, an inmate of a County Jail, was found by the

physician of that institution to be suffering from a recurrence of a case of chronic osteomyelitis. He was referred to a Municipal Hospital where he came under the care of a physician specializing in orthopedic surgery. The doctor made an examination of him and found that his left femur showed evidence of an acute exacerbation of a chronic osteomyelitis, going back more than ten years and that nine operations had been performed upon the leg for the correction of the condition. The doctor ordered complete rest in bed, elevation of the leg, and continuous wet dressings. He saw him from time to time and the man's condition became worse, and at the end of a week he advised that the femur be curetted for the purpose of removing diseased tissue, in an attempt to arrest the spread of osteomyelitis. Consent to an operation was obtained and it was performed, after which the patient was returned to bed with a plaster cast and drains. The doctor continued caring for the patient, and at the end of ten days decided that the operation had not been successful in checking the spread of the condition and decided that unless radical steps were taken general sepsis would develop and cause the patient's death. The patient was told the doctor's recommendations and consented to amputation of the leg which the defendant proceeded to do, amputating the leg in the region of the lower third of the femur, removing what in his opinion, at the time, was all of the diseased bone.

The doctor further continued the care of the case and a week after the amputation, after obtaining consent to an operation performed another operation removing further portions of the bone. The patient's condition then became better and he was finally discharged from the hospital and sent back to jail.

Thereafter an action was instituted against the defendant in which a charge was made that the defendant had amputated the leg without consent of the patient and further that the cast had been improperly applied so as to cause extensive swelling and gangrene.

The case came on for trial before a Judge and a Jury and at the close of the plaintiff's case was dismissed on motion of counsel for the defendant doctor thereby determining that the plaintiff had failed to prove a cause of action against him.

A cash award of \$1,000 is offered by The Williams & Wilkins Company of Baltimore for the best manuscript on a science subject, presented before July 1, 1937. The publishers put no limitations on the subject-matter or manner of handling, and none

on eligibility for the award. The manuscript must be in English and "of a sort calculated to appeal to the taste of the public at large." The desired length is given as 100,000 words. Further details may be had by addressing the publishers.

Cancer "Cures" and "Treatments", 15 cents
 Consumption "Cures", Cough Remedies, etc., 15 cents
 Cosmetics and Allied Preparations, 15 cents
 Deafness "Cures", 15 cents
 Epilepsy "Cures" and "Treatments", 15 cents
 Female-Weakness "Cures", 15 cents
 The Great American Fraud, 25 Cents
 Mechanical Nostrums, 15 cents

Medical Mail-Order Concerns, 25 cents
 Mineral Waters, 10 cents
 Miscellaneous Nostrums, 30 cents
 Miscellaneous Specialists, 20 cents
 Nostrums for Kidney Diseases and Diabetes, 20 cents
 Obesity "Cures", 15 cents
 Patent Medicines, 15 cents
 Testimonials, 10 cents

To Put Pressure on the Pressure-Fakirs

A RATHER GOOD WAY is suggested to put the pressure on the fakirs who run blood-pressure reading devices at Coney Island and other resorts. The arrests and court proceedings may or may not prove effective. For ways that are dark, and tricks that are vain, the law, like Bret Harte's heathen Chinee, is peculiar. The suggestion is that physicians report any unfortunate results that

may happen from these ignorant and blundering attempts to make tests that only a doctor is qualified to perform and interpret. Reports of that sort are something concrete, something that people will pass along by word of mouth, and that will quickly give the fakirs the reputation they deserve. This department will be glad to cooperate in any way possible.

"Doctor"—of What?

OREGON HAS A LAW so clear and simple that the very statement of it is a sufficient commendation. It provides that anyone who uses the title "doctor" shall designate after

his name the kind of "doctor" he is. What could be fairer than that? It might be worth bringing to the notice of the next session of the legislature.

Books

Books for review should be sent directly to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

ORDERING BOOKS

As a service exclusive to our readers, books published in this country may be ordered through the Business and Editorial Offices of the Journal (33 W. 42nd St., N. Y. C.) postage prepaid. Order must be accompanied by remittance covering published price.

RECEIVED

The Technique of Contraception. By Eric M. Matsner, M. D. Third edition. Octavo of 40 pages, illustrated. Baltimore, Williams & Wilkins Company 1936. Paper, \$50.

Diseases of the Respiratory Tract. Eighth Annual Graduate Fortnight of the New York Academy of Medicine. Octavo of 418 pages, illustrated. Philadelphia, W. B. Saunders Company 1936. Cloth, \$5.50.

Passive Vascular Exercises and the Conservative Management of Obliterative Arterial Diseases of the Extremities. By Louis G. Herrmann, M. D. Octavo of 288 pages, illustrated. Philadelphia, J. B. Lippincott Company 1936. Cloth, \$4.00.

The Study of Anatomy. Written for the Medical Student. By S. E. Whittall, M. D. Third edition. Duodecimo of 113 pages. Baltimore, William Wood and Company 1936. Cloth, \$1.75.

Collected Papers of the Mayo Clinic and the Mayo Foundation. Edited by Richard M. Hewitt, M. D., Lloyd G. Potter and A. B. Neyling, M. D. Volume 27, 1935. Octavo of 1353 pages illustrated. Philadelphia, W. B. Saunders Company 1936. Cloth, \$12.00.

Diseases of the Nose, Throat and Ear for Practitioners and Students. Edited by A. Logan Turner, M. D. Fourth edition, revised and enlarged. Octavo of 473 pages, illustrated. Baltimore, William Wood and Company 1936. Cloth, \$6.00.

Urology in Women. A Handbook of Urinary Diseases in the Female Sex. By E. Catherine Lewis, M. S. Second Edition. Octavo of 100 pages, illustrated. Baltimore, William Wood and Company 1936. Cloth, \$2.25.

The Extra-Ocular Muscles. A Clinical Study of Normal and Abnormal Ocular Motility. By Luther C. Peter, M. D. Second edition. Octavo of 351 pages, illustrated. Philadelphia, Lea & Febiger 1936. Cloth, \$4.50.

A Textbook of Histology. By Joseph Kraska, Jr., M. D. Octavo of 246 pages, illustrated. Baltimore, The Williams & Wilkins Company 1936. Cloth, \$2.50.

Your Breath and Your Health. By Louis M. Pearlman, M. D. Octavo of 128 pages illustrated. New York, Academy Publishing Company 1936. Cloth, \$1.00.

"would be to accept every wild-eyed scheme and put it into use without the proper tests and criticism"

Not a Pleasant Picture

Let us suppose for a moment that under some new political regime of the future all this sort of thing is put into the hands of a government department and is managed as other matters are managed at Washington. This is not such a wild supposition, either, for it might easily occur under a scheme of socialized medicine. What would happen then? Well, we can gather some idea from the ghastly farce that has been played with the Pure Food and Drug Bill, which has been so battered and tattered and torn and harried and chevied that its best friends were glad it did not pass.

Heaven help any measure framed to protect the public health that incurs the hostility and ferocity of moneyed interests that would like to see it die. Even the dullest imagination can grasp what a Council on Pharmacy and Chemistry would be like if under the thumb of a political party manager. A thousand times better to have it precisely where it is now, under the control of the profession interested in the public's health.

Dizzying Deluge of Discoveries

Another consideration, too, makes it imperative to have a central authoritative medical body pass on new products. Science is flooding the world with a dizzying cataract of new discoveries in every field—in mechanics, physics, chemistry, biology, physiology. Confusion and error are perhaps no more than natural in the mind that tries to grasp them all. Or, in the words of a medical writer of the Far West, "the poor credulous physician spins round like a pup chasing his caudal appendage in his futile efforts to keep up with the procession." This writer, Dr. A. B. Cooke of Los Angeles, goes on to say in *California and Western Medicine*:

New hormones, vitamins, and all kinds of fantastic panaceas, singly and in impossible combinations, released in ever-increasing number by laboratory technician and trade organization, have become perfectly bewildering in their number and variety. Today the profusion of remedies bears close resemblance to a tropical jungle, with its lush undergrowth concealing and smothering the occasional beautiful orchid.

No human mind is competent to remember and intelligently apply the resultant conglomeration. A heterogeneous mess of good, bad, indif-

ferent, and actually harmful, is thrust upon, and threatens literally to engulf us. Aneidemin, karcin, panodyn, jeculin, ineretone, sedobrol, glykeron, pneumophthisin, ergoapiol, endocrine compound No. 4 (or 404), anti-this and pro-that, etc., *ad nauseam et ad infinitum*. These, cited at random, are a few, a very few, of the fancifully named products that we are besought and instructed, at the sacrifice of much of our office time, to bear in mind and perpetrate upon our confiding patients. And the crop seems inexhaustible. The total cost involved in printing, postage, samples, and salaries would undoubtedly make a considerable dent annually in our huge national debt. Somebody must pay this cost. Trade does not operate on a philanthropic basis.

Beware of Hasty Bouquets

The unfortunate result that may happen when a physician is unwise enough to endorse one of these preparations, without waiting for the verdict of the A. M. A. or without a full and proper investigation of his own, was revealed in a recent trial. The Government was defeated in its attempt to prove that a certain manufacturer of an herb tea was guilty of fraud under the criminal clause of the Food and Drugs Act because two witnesses, a doctor and a layman, had written complimentary letters to him about his product.

In vain did these witnesses testify that they were misled, that they had found the tea worthless. The manufacturer declared that he depended upon their letters as endorsements, so the jury decided that he had no fraudulent intent. This case "should serve as a warning to the physician against haste in judgment of therapeutic results," remarks the *A. M. A. Journal*. Doctors are misled by "hasty enthusiasms," and "then, like the ghost in 'Hamlet,' their testimonials come back in later years to haunt them."

A New Library—of Charlatanry

A whole library is growing up on the subject of fake cures, treatments, and nostrums, and it is not at all a bad idea for a doctor to have some of this literature in his library, or, in fact, on the table in his waiting room, where it will help spread the much-needed gospel of honest medicine. County medical societies may wish to include this colorful and newsy subject in their medical broadcasts during the coming fall and winter. Here is a list of some of the booklets, full of good material, which are to be had from the American Medical Association, 535 North Dearborn St., Chicago:

book adapted for students taking the subject for the first time, and in this effort to present the subject in a condensed form without omitting any essentials, the author has succeeded admirably

However, this reviewer believes that this very brevity militates against the use of the book for medical students and physicians, because the detailed studies which such a reader would seek are not to be found here

I COHEN

The Radiology of Bones and Joints By James F Brailsford, M D Second edition Quarto of 571 pages, illustrated Baltimore, William Wood & Company, 1935 Cloth, \$9 00

The second edition of this book, appearing one year after the original, at once bespeaks its value It is indeed a well written addition to medical literature.

The author stresses the importance of periodic X-ray studies, and the necessity of the Radiologist taking a clinical interest as well as specializing in execution and interpretation of the films

The various traumatic and diseased states that the skeleton may fall heir to are described, so that bone pathology is quite completely and well covered. There are three hundred and forty illustrations, including many tracings which clarify otherwise obscure findings, and the X-ray photographs are well chosen and of good quality The book abounds in references, there being a bibliography of twenty-seven pages

For the orthopedist it should prove of great value, for those in industrial practice it will help clarify many doubtful cases, and for the radiologist it is a storehouse of information

MILTON G WASCH

Fasciae of the Human Body and Their Relations to the Organs They Envelop By Edward Singer, M D Quarto of 105 pages, illustrated Baltimore Williams & Wilkins Company, 1935 Cloth, \$3 00

This volume is apparently a continuation of the work of fascia planes which was presented as a small monograph by the late Dr B B Gallaudet in 1931, and which we had the pleasure of reviewing

The surgical work during the past few years has created a great deal more attention toward the various fascia planes of the body, and the work of Dr Gallaudet and this more comprehensive volume of Dr Singer's fulfills a much needed want.

The method of dissecting the fascia, enveloping the organs, which is the one used by Dr Singer, is somewhat unique and gives one a more comprehensive idea of the fascial layers and their relationship

The 24 original illustrations by Elizabeth Cuzzort are excellent and exceedingly beneficial in visualizing the concise text of Dr Singer

This is an excellent volume for the student of anatomy, regardless of his interest in the fascial planes of the body

HERBERT T WIKLE

For and Against Doctors. An Anthology compiled by Robert Hutchison and G M Wauchope Duodecimo of 168 pages Baltimore, William Wood & Company, 1935 Cloth, \$2 00

This little book of 168 pages is comprised of a foreword, the Oath of Hippocrates and six chapters, as follows I Proverbs II The Ancients III Medieval IV Fifteenth to Seventeenth Centuries V The Eighteenth Century VI The Moderns A Retrospect. It is replete with interesting proverbs and excerpts, reflecting the lay opinion regarding the skill and competence of physicians throughout the ages of recorded history These excerpts represent the views of great thinkers in different historical periods They are impersonal and, on the whole, frankly condemn the doctor, his helpless attitude towards disease, and lively interest in the commercial side of his profession (sic!) There are a minority of noble tributes The book is full of atmosphere and evidences scholarship on the part of the authors To those interested in medical history and the general relationship between the public and the doctor, it must prove both fascinating and educational

J M VAN COTT

The Early Diagnosis of the Acute Abdomen. By Zachary Cope, M D Seventh edition Octavo of 254 pages, illustrated New York, Oxford University Press 1935 Cloth, \$3 75

This book now in its seventh edition deserves a prominent place on the preferred shelf of every practising physician, regardless of whether he be general practitioner or specialist The difficulties of diagnostic criteria in acute abdominal conditions are extremely well covered. The author stresses the importance of early, careful diagnosis as against "spot diagnosis" or morphine delay. The oft repeated necessity for rectal examination is mentioned The importance of shoulder pain, particularly on the right side, in the differentiation of lesions affecting the right diaphragm is discussed An interesting note is made of the fact that a normal pulse does not necessarily mean a normal abdomen. In his discussion of acute appendicitis, he notes the fact that an appendix may be all but perforated without local

International Clinics A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc Edited by Louis Hamman, M D Volume 2, 46th Series, 1936 Octavo of 327 pages, illustrated Philadelphia J B Lippincott Company 1936 Cloth, \$3 00

Security Against Sickness A Study of Health Insurance By I S Falk Octavo of 423 pages Garden City Doubleday, Doran & Company, Inc 1936 Cloth, \$4 00

Post-Graduate Surgery Edited by Rodney Mangot, F R C S Volume II Quarto, illustrated New York, D Appleton-Century Company 1936 Cloth, \$45 00 for set of three volumes

Exophthalmic Goiter and Its Medical Treatment. By Israel Bram, M D Second edition Octavo of 456 pages, illustrated St Louis, C V Mosby Company 1936 Cloth, \$6 00

Principles and Practice of Recreational Therapy for the Mentally Ill By John E Davis, B A Octavo of 206 pages New York, A S Barnes & Company 1936 Cloth, \$3 00

Mental Nursing (Simplified) By O P Napier Pearn, M R C S Second edition 16mo of 328 pages, illustrated Baltimore William Wood and Company 1936 Cloth, \$2 00

Minor Surgery By Frederick Christopher, M D Third edition, reset Octavo of 1030 pages, illustrated Philadelphia, W B Saunders Company 1936 Cloth, \$10 00

Methods of Tissue Culture in Vitro by Ralph Buchsbaum, Ph D, and **Outlines of Histological Methods with Special Reference to Tissue Culture** by Clayton G Loosli, Ph D Octavo of 81 pages, illustrated Chicago, University of Chicago Press 1936 Paper, \$1 00

The Eye and Its Diseases By 82 International Authorities Edited by Conrad Berens, M D Octavo of 1254 pages, illustrated Philadelphia, W B Saunders Company 1936 Cloth, \$12 00

Disability Evaluation Principles of Treatment of Compensable Injuries By Earl D McBride, M D Octavo of 623 pages, illustrated Philadelphia, J B Lippincott Company 1936 Cloth, \$8 00

Pathological Physiology and Clinical Description of the Anemias By William B Castle, M D & George R Minot, M D Edited by Henry A Christian, M D Octavo of 205 pages New York Oxford University Press 1936 Cloth, \$3 00

The Toxaemias of Pregnancy By Dame Louise McIlroy M D Octavo of 355 pages Baltimore, William Wood & Company 1936 Cloth, \$5 00

REVIEWS

International Clinics A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc Volume 4, 45th Series, 1935 Edited by Louis Hamman, M D Octavo of 331 pages, illustrated Philadelphia J B Lippincott Company, 1935 Cloth, \$3 00

The first article by J H Means is on "Observation of the Tongue and What it Teaches Us about the Patient's General Condition" The dry tongue, the smooth tongue and the large tongue, the last often suggesting myxedema are the main types considered "Idiopathic Steatorrhea," "Aleukemic Leukemia" called as preferred by the author "Hypocytic Leukemia," "Anemia in Pregnancy," and "The Treatment of Diabetes Mellitus" are some of the other articles

In an article on the use of bacterial vaccines, P H Long of Johns Hopkins discusses the subject in a conservative manner He finds that typhoid vaccine is the only one that fulfills the requirements of an efficient bacterial immunizing agent He concludes that the use of Streptococcal vaccines in the treatment of rheumatoid arthritis produces only results that are uncertain and contradictory

There are other interesting articles, especially the one on Lymphogranuloma Inguinale with a preliminary report of 136

cases and a review of the literature of the subject which seems to be very complete, consisting of 371 references This is written by C F Martin and H E Bacon of the University of Pennsylvania

W E McCOLLUM

Regional Anatomy By J C Hayner M D Octavo of 687 pages Baltimore, William Wood & Company, 1935 Cloth, \$6 00

This anatomy is designed as a dissection manual and is arranged in regional order This arrangement is a decided improvement over the usual structure of a textbook. The presentation is very clear and concise without giving it, however, the character of a compend

The complete absence of diagrams and illustrations is of course, in accordance with its aim, but necessitates the use of an atlas when it is being used as a reference book For the mature surgeon it possesses many advantages over the accepted manuals of anatomy particularly in its size and comprehensiveness

GEORGE W FERR

A Textbook of Bacteriology By Thurman B Rice M D Octavo of 551 pages illustrated Philadelphia W B Saunders Company 1935 Cloth, \$5 00

This book is offered as a shorter text-

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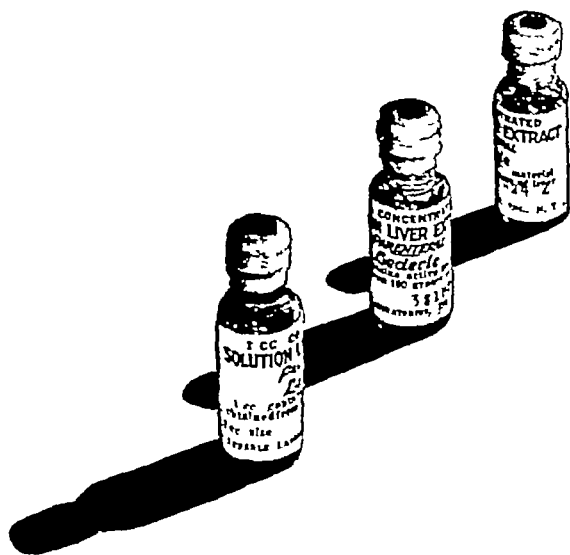
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rigidity, and discusses the pitfalls very clearly, outlining the usual "march of events" His description of acute pancreatitis is excellent, also that of intestinal obstruction The section on colics will prove fascinating and important. The last chapter of the book on diseases which simulate the acute surgical abdomen completes a most interesting and valuable contribution to medical literature

BENJAMIN M BERNSTEIN

New Pathways for Children with Cerebral Palsy By Gladys G Rogers & Leah C Thomas Octavo of 167 pages, illustrated New York, The Macmillan Company, 1935 Cloth, \$2 50

This is a book for those specializing in the care and training of handicapped children While it deals specifically with the experiences and results of a camp for children suffering from all forms of cerebral palsies and birth injuries, it possesses many features which commend it to the examination of other, similarly situated, institutions (such as those for mental defectives) It is full of practical findings and suggestions for the handling of the emotional as well as the physical handicaps involved and shows how meeting the needs of these children in a simple way, permits them to be reared in a social environment suitable to their requirements and outlook as human beings

SAM PARKER

The Medical Treatment of Gallbladder Disease By Martin E Rehfuss, M D & Guy M Nelson, M D Octavo of 465 pages illustrated Philadelphia, W B Saunders Company, 1935 Cloth, \$5 50

In this book a distinguished clinician who is also a research worker, has made the fruits of his knowledge and experience available to the medical profession

The authors have produced a book which, in a concise manner brings order out of the chaos of medical thought frequently surrounding this problem

The diagnosis of gall bladder disease as based on history, bile examination (obtained by duodenal drainage) and by x-ray is discussed in detail The section on roentgen diagnosis is particularly helpful It is also interesting to note that the authors are definitely committed to the value of the duodenal tube, both in diagnosis and treatment of the many conditions affecting the gall bladder

Gall bladder disease is considered a secondary condition with three fundamental factors, namely—the metabolic problem, the problem of infection and the question of stasis Treatment is outlined in detail with these factors in mind The medical treatment advised includes diet, various forms of drug therapy, duodenal intubation, bacteriological methods, physiotherapy and mineral water therapy

A review of this book can hardly do justice to the wealth of information which it contains It deserves deliberative reading for the slow digestion of the innumerable practical and helpful facts which it offers

HENRY F KRAMER

The Modern Treatment of Burns and Scalds By Philip H Mitchiner, M D Octavo of 64 pages, illustrated Baltimore, William Wood & Company, 1935 Cloth, \$2 00

This small volume of sixty-four pages has been compactly written to illustrate the modern treatment of burns and scalds

There are six chapters which describe various methods of treating sunburn, electric, x-ray, radium, chemical, mustard gas, burns, etc It elaborates a great deal upon tannic acid treatment and covers in a fair way the causes leading to death in burns and scalds, with some account of the general principles on how to prevent and combat them

R F HARLOE

Aids to Medicine By James L Livingstone. Fifth edition 16mo of 422 pages Baltimore, William Wood & Company, 1935 Cloth, \$1 50

Five editions of this work attests its value as a useful volume for handy reference to medical students It covers the subject of medicine in fifteen chapters and is complete, thorough and inclusive as well as accurate It will prove a valuable volume for review and reference

HENRY M MOSES

Prescription Writing and Formulary By Charles Solomon, M D Octavo of 351 pages illustrated Philadelphia, J B Lippincott Company, 1935

So much emphasis has been put upon diagnosis and so little attention has been given to therapeutics and the action of remedies for pathological conditions that it is a pleasure to study this work by the author whose experience has taught him the necessity of more complete study and knowledge of drugs and their uses than is included in the curricula of many of the medical colleges Not only is this volume accurate, complete, concise, and carefully prepared and presented but it also contains interesting references to the history of prescription writing and drug using of those nations whose writings have been handed down to us

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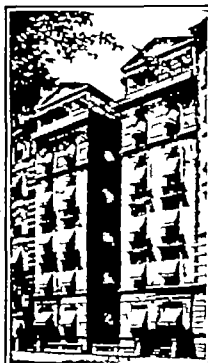
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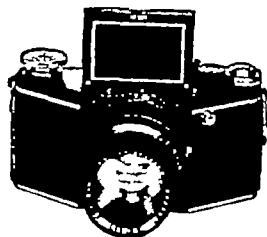
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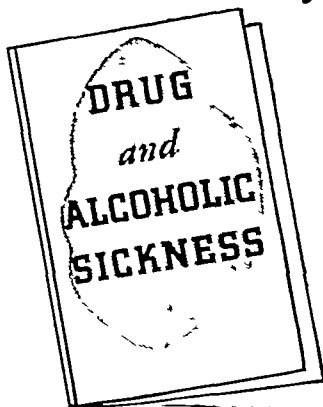
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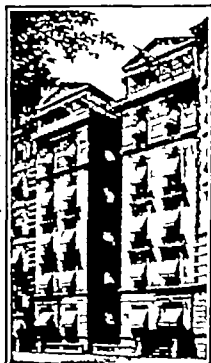
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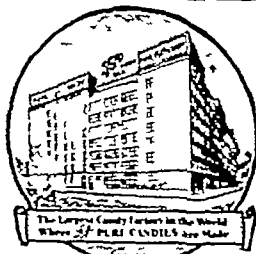
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*Proc. Soc. Exp. Biol. and Med. 1934 32 241 245

Laryngoscope 1935 XLV, 149 154

N Y State Jour Med. 1935 35 No 11, 590

Arch. Otolaryngology Mar 1936, Vol. 23 No. 3 306-309

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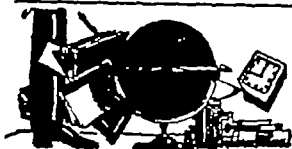
N Y State Jour Med 1935, 35—☐
No 11, 590, Laryngoscope 1935 XLV,
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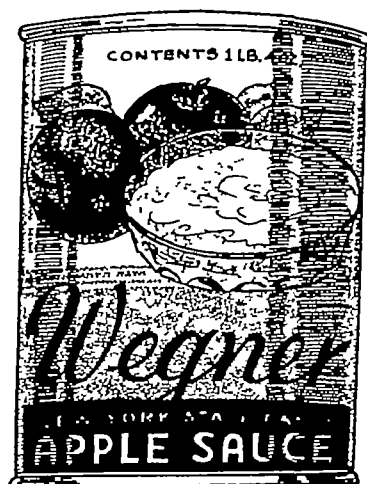
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Travel and Resorts

Eliminating "Help" in Competition

A new note in staging a fair competition was introduced at the Atlantic City meet for national lifeguards championship last month

Dummies were used as "victims" instead of human beings. This according to Dr. Charles L. Bossert, veteran head of Atlantic City's Beach Patrol who was in charge of the arrangements, prevented either help or hinderance by human "victims" as heretofore experienced. It had been discovered, for instance, that when a lifeguard towed a man ashore, the purported victim could kick under water and help along—or could spread legs, cup hands at side, and so create a drag.

The substitute dummy, used for the first time this year in any competition of this sort, is made of a common canvas bag, loaded at one end with forty pounds of crushed stone. In the middle is placed an empty five-gallon oil can for buoyancy, and the other end is tied together in long slender forms like a man's arms. While not as realistic as the flesh and bone of a real human, the substitute is rather scientifically created and has the added advantage over the old arrangement, in that every "victim" is identical in size, shape, and weight which eliminates any chance of even a slight advantage in that respect.

The success of the above mentioned event as well as the Showman's Variety Jubilee, is now a matter of record, but the wind-up of the Summer season does not by any means close Atlantic City's attraction. Although but slightly over a hundred miles south of New York, the "World's Playground" has a surprisingly milder climate even during winter.

And for those who know what it is to enjoy the tang of the sea air over a weekend, there is probably nothing (less than a Florida vacation for which few of us can spare time) that can meet the pleasantness of one of Atlantic City's splendid hotels, attractions, and boardwalk in the Fall and Winter.

* * *

Through periodic and other medical examinations the railroads are prolonging the lives of their employees, and by medical treatment are reclaiming thousands who otherwise would have to be retired from active service.

* * *

By chemical treatment of water used in locomotive boilers, the life of a fire box and flues has been doubled and in many instances trebled.



Summer Sport in Chile — Skiing

The Ski Club of Chile reported a most successful season in the Corro Colorado district of the Las Condes Valley.

Travellers on Grace Line steamers back from a trip to that country, speak of July and August snowfalls as if such things were a common everyday summer affair. However, the Ski Club predicts these snowfalls will make September the usual best month for Chilean ski-runners.

The Ski Club's hut, at 7,200 feet above sea level dominates open ski fields (equal to the world's best) occupying an area of from 30 to 40 square miles. Slopes of all degrees permit practice runs or more exigent tests of expert skill.

Besides Las Condes, there is the Club Andino's grounds at Lagunillas, only three hours from Santiago, and the German Club is at Potrero Grande in beautiful skiing country. Further south at Chillan, the Ski Club of Concepcion and Chillan own a well equipped hut while enthusiasts who follow the sport in Switzerland, claim that the famous Parsenn course at Davos is commonplace in comparison to this area where one may stay a month and never repeat the same run. Two other clubs in the south are those at Osorno where the July snowfall is particularly heavy, and at Bariloche in the Lake District.

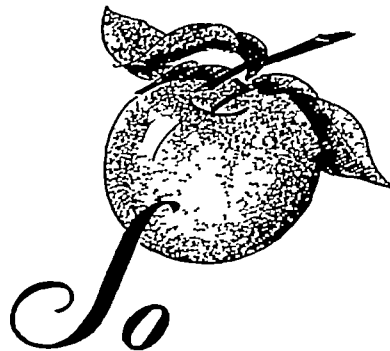
Skiing enthusiasts who are not members of these clubs, find admirable sport at Portillo on the Trans-Andine Railroad, five hours from Santiago. The run drops 2,700 feet from Portillo to Juncal, or one may climb to the Argentine border and run down over untracked snow from an altitude of 13,500 feet.

* * *

Memorial Highway Attracting Motorists to Lake Placid

The period from September 15 to the same date in October at Lake Placid is called "The Month of Flaming Leaves," when Nature's frost brush paints the trees and mountain foliage in gorgeous shades of red, yellow, and russet, transforming the whole region into a thing of vivid flame.

Sport and diversion are at their best during "The Month of Flaming Leaves." Members of the cottage and hotel colony take to the



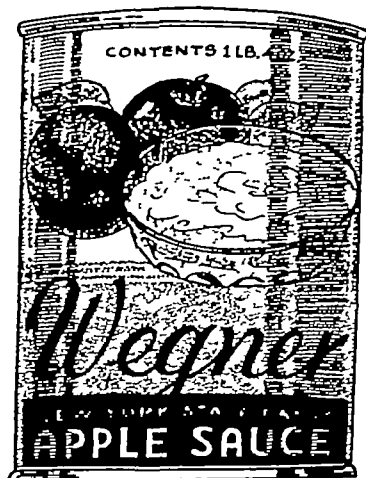
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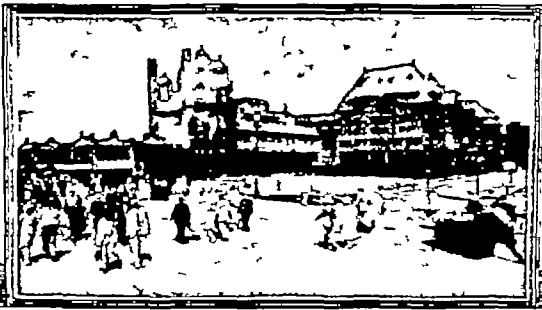
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For the diversion of Boardwalk interests, piers, theatres, shops and exhibits—for golf, fishing, tennis, riding—for the unsurpassed comfort of great hotels and modern boarding houses—

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THE WORLD'S PREMIER
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Welcomes the Profession

For illustrated folder, write
ROOM 209, CONVENTION HALL

bridle trails, the golf courses, the mountains, and the forests, where the keen air of early autumn gives a new zest to every activity

Attractive rates at hotels, clubs, and guest-houses through September and October appeal to the autumn-minded vacationist.

Motorists, in particular, are enthusiastic about the drive up Whiteface mountain at the head of Lake Placid over the new million-dollar Whiteface Mountain Memorial Highway. The clear air of early fall gives added length and beauty to every vista from this great peak, 4,872 feet above the level of the sea.

Work has already begun on the tunnel and elevator which will take sight-seers from the present end of the highway to the peak of the mountain. The tunnel enters the granite side wall 400 feet from the end of the road. It will be approximately five feet wide by seven feet high and will pierce the mountain on a slight incline for a distance of 424 feet.

From this point an elevator shaft will rise perpendicularly 273 feet, emerging by the fire tower on the summit of Whiteface 4,872 feet above the level of the sea.

* * *

Highway-Railroad Grade Crossing Accidents

Although there was a reduction in the number of accidents, there was an increase in the number of persons killed at highway-railroad grade crossings in May, this year, compared with the same month last year, the Safety Section of the Association of American Railroads announced today. The number injured was slightly below last year's figures.

Fatalities from grade crossing accidents in May, 1936, totaled 119, compared with 108 in the same month last year. The number of accidents reported was 247, a decrease of 29 compared with May, 1935, while the number of persons injured in those accidents was 285, or a decrease of 12 below the same month last year.

In the first five months of this year, fatalities resulting from accidents at highway-railroad grade crossings totaled 642 compared with 630 in the same period of 1935, or an increase of twelve. Persons injured totaled 2,002, compared with 1,884 in the first five months of 1935. The number of grade crossing accidents in the first five months this year was 1,674, an increase of 91 compared with the same period in 1935.

* * *

The railroads, particularly those in the South, have been among the leaders in bringing about the control of mosquitoes as a preventive measure against the spread of malaria and other diseases.

HOTEL DENNIS

ATLANTIC CITY

Directly Facing the Sea

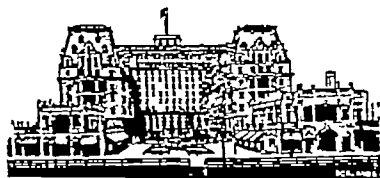
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The Traymore RE-CREATES! The very atmosphere, the quiet foyers, large sleeping rooms, broad sun decks, the outdoor sports and solarium, the Health Baths and the cuisine—are ALL uplifting! Rates from \$5 European—with meals \$8

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NASAL SYPHON**

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ACROSS BOARDWALK
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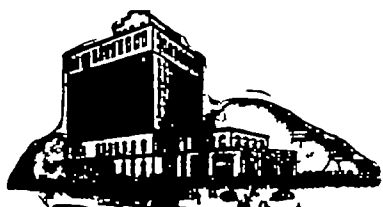
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Sea Water Swimming Pool
Turkish Baths Marine Sun Deck

European Plan

Beautifully Furnished House-
keeping Apartments

Bar, Grill and Cocktail Lounge



Write for Descriptive Booklet and Rates

"Sea Torpedoes" Lure Motorists to Nova Scotia

Swimming north at the rate of a thousand miles a week, great schools of "thunnus thynnus" (tuna to you!) have been arriving during the month in the waters of Fundy Bay off Wedgeport and Yarmouth, and at Hubbard and Halifax on the Atlantic side of the province

Wedgeport is less than a half hour's pleasant motoring drive from the Lakeside Inn at Yarmouth, southwestern gateway to Nova Scotia and a well-known summer watering place. Wedgeport itself, being a small, French-Canadian fishing village populated almost entirely by the descendants of the ancient Acadians who returned after the expulsion of 1755, has no facilities for the entertainment of visiting motorists who usually make their base of operations at one of the inns on Milo Lake, northeast of Yarmouth

The Lobster Bay fishing grounds, near here, were "discovered" by Michael Lerner, New York sportsman, last September, who boated twenty-one tuna in eight days, the largest of which, a 450-pound specimen, was landed in 46 minutes and the smallest, a 95-pounder, was boated in three and one-half minutes

Information regarding the tuna grounds of Yarmouth is available at the Guides Association headquarters, South Wedgeport, at any Canadian Pacific hotel or at offices and agencies of the Dominion Atlantic Railway and the Eastern Steamship Company Yarmouth may be reached in 15 hours by boat from Boston, or 22 hours from New York City, or by a motor journey southwest from Digby and "The Pines" after a ferry trip across the Bay of Fundy from Saint John, N B The town site itself is historically interesting, having been discovered by the Vikings 500 years before Columbus landed in the West Indies Principal points of interest aside from the fishing in fresh and salt water, are the Public Library where the priceless Runic stone is kept, which gives the evidence of "Vineland's" early discovery, the Lakeside Inn the fishing villages, a splendid golf course and country club, and numerous picturesque drives through the moose and Virginia deer country

According to Mr Lerner, he has never seen more fish surfacing at one time than in the waters off Yarmouth "Not even tarpon at Boca Grande can compare", he adds, "or pollock at Montauk Point in May There were acres and acres of tuna Visualize if you will a fast running tide-rip, a mile in width and half as much in length, with great blue-fin tuna-fish of 100 to 600 pounds—playing and

(Continued on page xxxiv)

this mountainous and sparsely populated region, ideal for the climber, hiker or angler in pursuit of the lordly salmon. Its wild peaks include Ben Ime, Beinn Narnain and the Cobbler, and the magnificent hills of the country known ironically as "Argyll's Bowling Green." Lovely Loch Eck, Glen Masson, Glen Finart and little-known Glen Shellach, lie in its southern portion.

The angling fanatic may pass on to Lough Neagh and Lough Melvin in Ulster with their fighting trout, known to Northern Ireland as Dollaghans, Gillaroos and Sonaghans. Ulster's lakes and rivers teem with fish—its salmon and trout fishing are becoming famous. Parts of Britain are as wild as any land in the world, but the distances are short, and the adventurous traveler, reaching them by fast train or plane, need waste little of his precious time en route.

* * *

"Lohengrin" Eight Times, "Parsifal" Five Times, "Ring" Twice to be Performed in Wagner City

The German Railroads Information Office, which some time ago announced that a Wagner Festival Cycle would be given in Bayreuth next year, has today received from Bayreuth the following program for that occasion.

The 1937 Bayreuth Wagner Festival will take place from July 22 to August 20 during

NICHOLS SYPHON POWDER



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We want every physician to try NICHOLS SYPHON POWDER. It is particularly indicated for use with the Nichols Nasal Siphon—or wherever nasal cleansing is advantageous.

Try NICHOLS SYPHON POWDER, Doctor!

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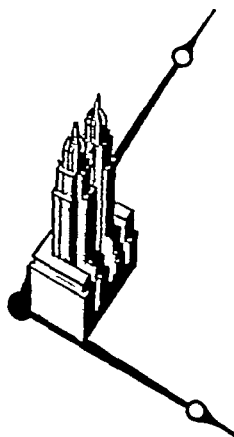
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Large cheerful rooms,
transient or residential,
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open roof deck, enclosed
solarium, library, chil-
dren's playroom, private
park privileges

jumping, feeding on mackerel. The name of this newly found 'hot-spot' of the north is Soldier's Rip, situated about an hour's sail in a fish boat from Lower Wedgeport, which is 12 miles by a good automobile road from Yarmouth. The tuna feed around the many islands that comprise the Tusket group in Lobster Bay, going out with the ebb tide as far as the rip, which is only a few hundred feet from the outer islands."

A giant tuna weighing 956 pounds was taken in Nova Scotia waters in 1934, but every year tuna weighing as high as 1,500 pounds are harpooned and landed during the fishing season 'round Hubbard and Halifax. In the capital city parties are usually made up at the Lord Nelson Hotel, opposite the Public Gardens

* * *

"Roughing It" About Britain

The recent creation of a National Forest Park in Scotland is the latest concession to the Briton's love for roughing it. The new park, containing about one hundred square miles of one of the most beautiful and least known parts of the country, is divided into two parts by Loch Goil, an arm of the sea which, branching off from Loch Long and the Firth of Clyde, pierces the heart of the mountains.

There are scarcely any roads or trails in



★ On the board walk you get the real sea breeze, you slip on your swim suit in the hotel—in a step or two you are on the beach. You can sit on the sun deck and watch the world go by, a gay, colorful world at play and it costs no more at the



C. H. LANDOW MGR

Hotel KNICKERBOCKER

Lowest rates on the Boardwalk

Room Bath Meals Included

All private baths with hot and cold sea water

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in BERMUDA it's

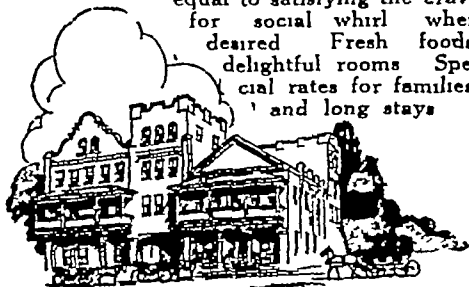
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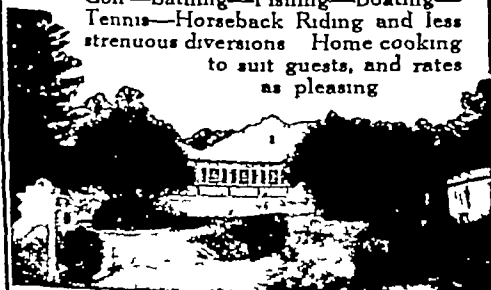
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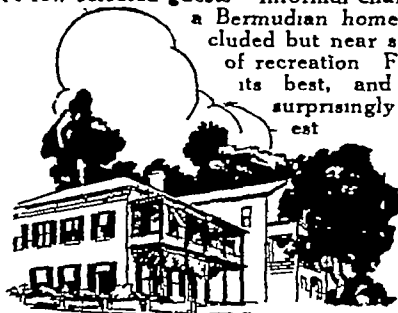
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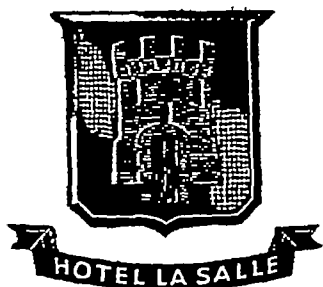
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July 23 Parsifal	Aug 7 Lohengrin
July 24 Lohengrin	Aug 8 Lohengrin
July 26 Rheingold	Aug 10 Lohengrin
July 27 Walkure	Aug 11 Parsifal
July 28 Siegfried	Aug 13 Rheingold
July 30 Goetterdaemmerung	Aug 14 Walkure
Aug 1 Parsifal	Aug 15 Siegfried
Aug 2 Lohengrin	Aug 17 Goetterdaemmerung
Aug 4 Lohengrin	Aug 19 Parsifal
	Aug 20 Lohengrin

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* * *

Ontario Woman Catches 30-lb Muskie

A O Seymour, general tourist agent of the Canadian Pacific Railway states that a 30-lb muscalunge, 4 ft. long and 17 inches in girth, has just been caught in the French River by Mrs T R Meredith of London, Ont This fish has been entered in the annual French River Bungalow Camp Trophy Competition, which will be decided this month Mrs Meredith, however, will be up against stiff competition, since Jack Strathdee, manager of the French River Camp, reports the biggest season in its history

Mr Seymour also reports that muskie fishing at the Lake of the Woods Muskie Camps at Kenora, Ont, has been exceptionally good this season The largest fish taken was a 42-pounder

* * *

Travel Brevities

DR. JAMES W SMITH of New York, who was recently a guest at the Castle Harbour in Bermuda, returned on the *Monarch of Bermuda* last week.

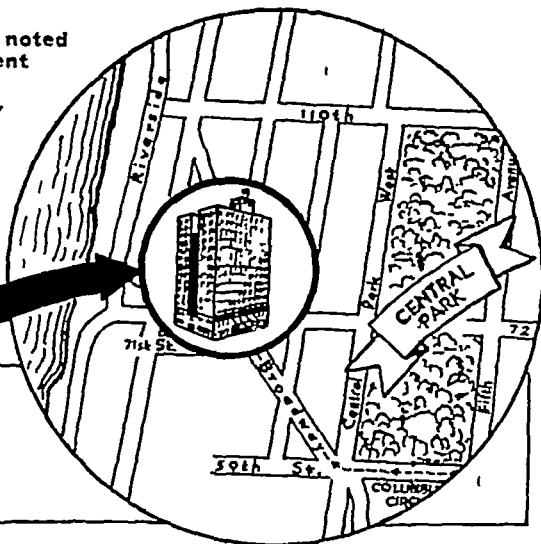
THE FOLLOWING were among those sailing

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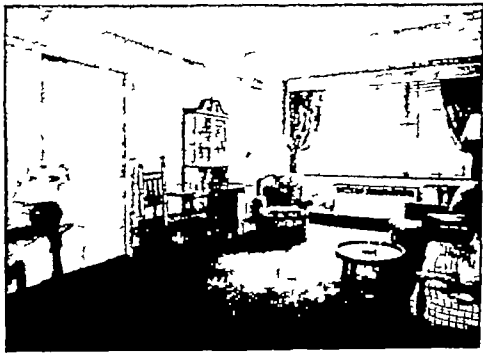
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for a rest in Bermuda on the steamers *Queen of Bermuda* and the *Monarch of Bermuda*, Dr and Mrs E W Whalen of Pennsylvania, and Dr and Mrs Charles Browne of N Y

RECENT GUESTS at the St George Hotel and Golf Club, included Dr E S Baumgarten of Maryland and Dr George R Mills of N Y

DR. HAROLD E B PARDEE specialist on diseases of the heart and the circulation, and consulting physician at Woman's Hospital of New York, was among those sailing for France aboard the *Champlain* of the French Line. Dr E F Dawson-Walker, Dr John B Tillev, and Dr Joseph Stuart were fellow passengers

IN NEW YORK, the following doctors were registered the past few weeks at the Hotel Lexington—Dr Arthur Moder, Dr Arthur N Curtiss, Dr E C Tillman, Dr H Richman, Dr J F Henegan, Dr A C Silverman, Dr J L Wachter, Dr Jas Bernard, Dr J Younie, and Dr Edw Kivovits, of New York, Dr H L Casey, Dr R Crawford, and Dr Roger Batchlor, of Pennsylvania, Dr E J O'Rourke, Dr Geo R Gagliardi, and Dr Francis Steel, of Massachusetts, Dr A G Rutherford of West Virginia, Dr Edwin Pyle of Connecticut, Dr Dale R Coman of Rhode Island, Dr Gail E Chandler of Florida, Dr C W Kelley of Canada, Dr J C Bell of Kentucky, and Dr J I Johnston of Illinois

AMONG MANY SAILING and arriving on some of the de luxe liners of the Cunard White Star Line, the following doctors are included—Dr and Mrs Wiley B Wesson, Dr and Mrs Thomas H Ayer, Dr S C Churchill, Jr, Dr A C Williamson, Dr Eli Long, Dr Carl Munger, Dr and Mrs Brian Swift, Dr and Mrs David M Levy, Dr William T O'Halloran, Dr E W Westphal Dr and Mrs C A Arnold, Dr G H Iler, Dr T Grier Miller, Dr and Mrs Russell Cecil, Dr John T Knox, Dr and Mrs Endicott Peobody, Dr and Mrs F J Scrimgeour, Dr John Storer, and Dr Rivington D Lord

ON GRACE LINERS, sailing and returning many prominent doctors make up large passenger lists. Among those especially mentioned are—Dr Leonard M Averett, prominent Philadelphia physician, and his wife, Dr and Mrs Frederick Meislo, also of Philadelphia, Dr Atilio Macchiavollo, Sanitary Inspector of Northern Chile, and his wife, Dr Augusto Delgado, a prominent physician of Peru, en route to the Mayo Brothers Clinic, Dr W C Danforth of Illinois, Dr Juan Moraleda, a member of the Medical Department of the Braden Copper Co of Chile, and his wife, Dr W Robert Perkins of Washington, and Dr and Mrs Chester Kistler of Pennsylvania

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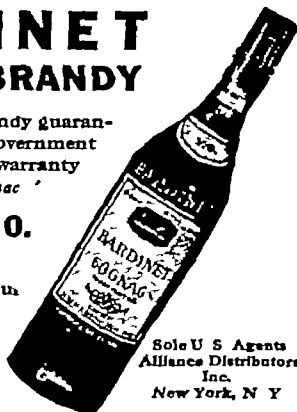
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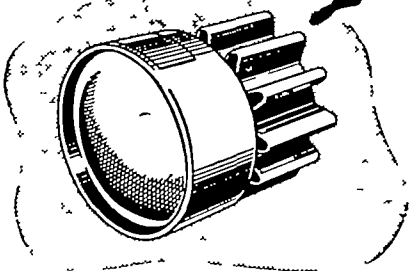
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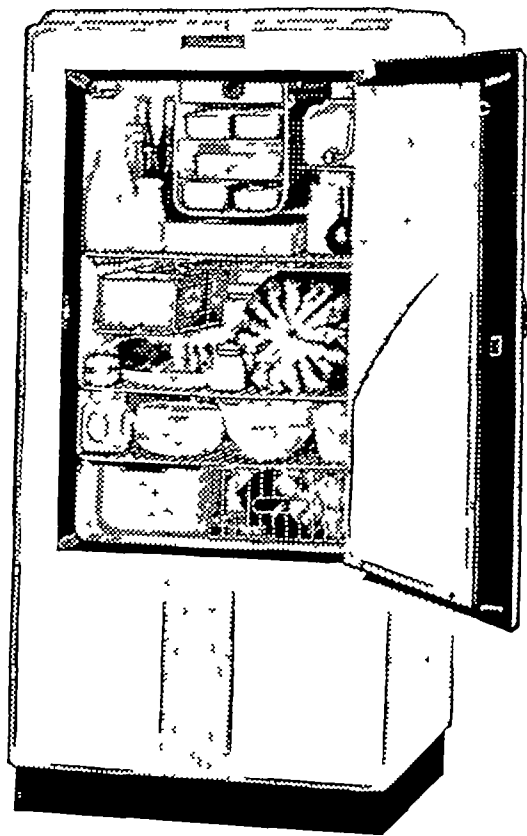
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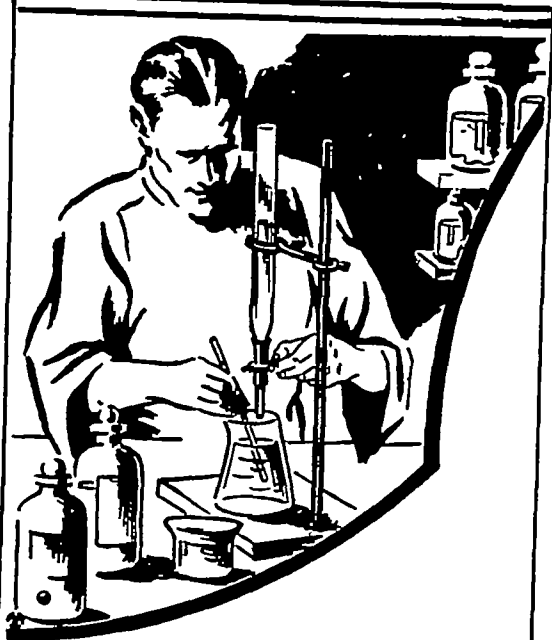
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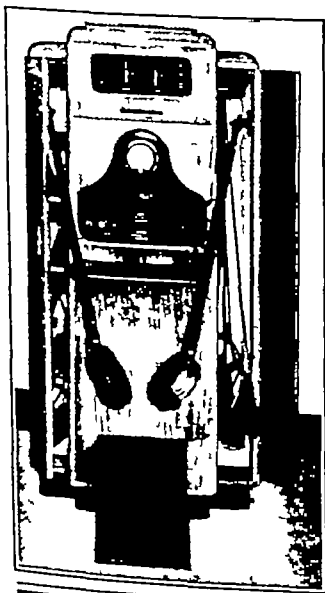
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*Any information concerning this man
should be forwarded by writing to—*

Special Agent in Charge
Federal Bureau of Investigation
U S Department of Justice
Room 607 U S Court House
Foley Square, N Y City
or by phoning—REctor 2-3520

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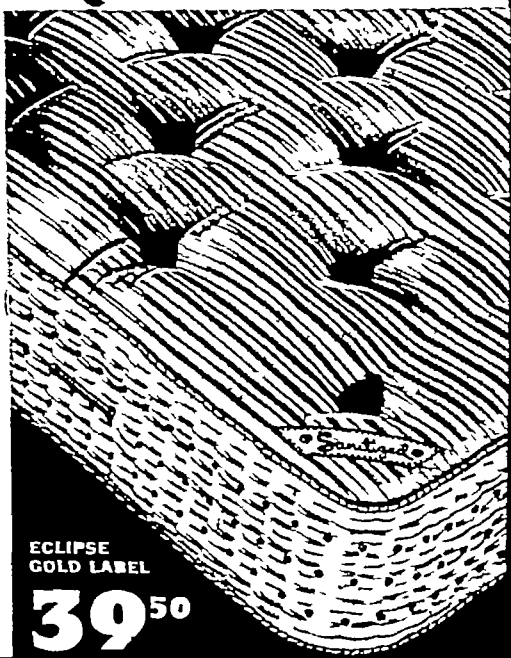
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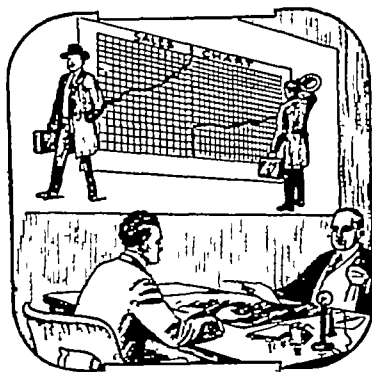
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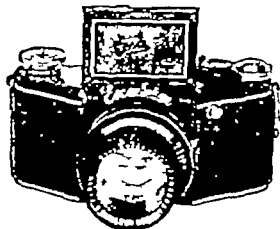
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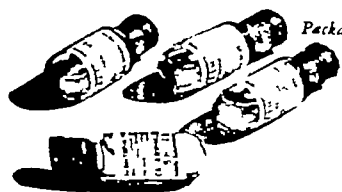
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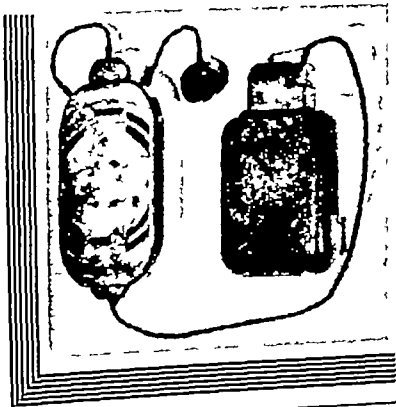
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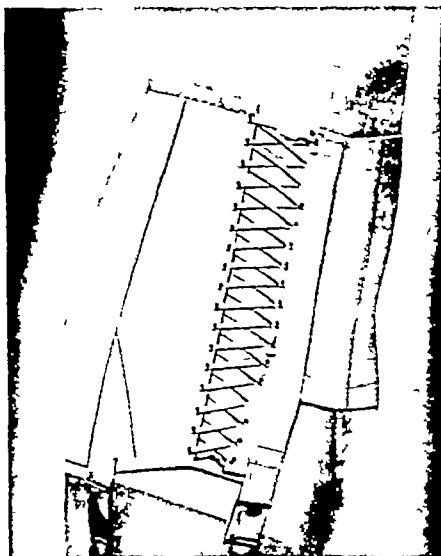
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IV. VITAMIN B₁

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The original vitamin B of Eijkman and of Funk, while definitely possessed of antineuritic potency, is now known to be of a complex nature. Between 1919 and 1926, the vitamin B complex was resolved into vitamins B (B₁) and G (B₂). Subsequent work has indicated the existence of other vitamins in the complex, whose chemical natures or relations to human nutrition are not as yet clearly understood.

As a direct result of many researches on vitamin concentrates, the chemical identity of the crystalline antineuritic factor has recently been described as a derivative of 6 aminopyrimidine (2).

It has been known for many years that vitamin B₁ may be destroyed by heat. In the canning procedure, a number of heat treatments of food may be involved, especially in the thermal "processing" of the product to insure its preservation. In the "process", many foods are subjected to a heat treatment after sealing in the can, to destroy spoilage organisms which may be present on the raw material. In other cases, the food is filled into the cans at a sufficiently high temperature to obtain the same result. Therefore, the question of the

effect of the canning procedures on vitamin B₁ frequently arises.

The times and temperatures necessary for the processing of canned foods are governed by a number of factors, important among them being the pH of the food itself. Highly acid foods require only short heat processes at the temperature of hot or boiling water to destroy spoilage organisms. The so called "non acid" or "semi acid" products require higher temperatures—usually 240°F (116°C.).

As might be expected, acid foods have been found to suffer only a slight loss of vitamin B during canning (3).

The degree of retention of vitamin B₁ in the non acid foods is not as high as in the acid foods (4).

This is partly due to the heat treatments accorded them and possibly also to their low acidity, since the vitamin is more stable in acid media.

The facts in the case may be summarized briefly by the statement that commercially canned foods may be depended upon to supply vitamin B to extents consistent with the amounts of the vitamin originally present in the raw materials from which they were prepared. Because of their widespread use, canned foods contribute a notable amount of vitamin B₁ to the American dietary.

AMERICAN CAN COMPANY

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(1) Vitamins. A Survey of Present Knowledge
Medical Research Council. Special Report
Series No. 167. 1932. His Majesty's Stationery Office, London.

The Vitamins
H. C. Sherman and S. L. Smith
1931 Am. Chem. Soc. Monograph
2nd Edition

(2) 1935 J. Amer. Chem. Soc. 57 1751

(3) 1932 Ind. Eng. Chem. 24 457

(4) 1932 J. Nutrition 5 307

This is the seventeenth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

THE ease of application which makes Benzedrine Inhaler so useful with adults is even more important in treating the congestion occurring in children's head colds. The vapor form—in addition to its greater effectiveness—overcomes the strenuous objections which children show to liquid inhalants as applied by drops, tampons or sprays.

Furthermore, the simplicity of Benzedrine Inhaler makes it especially suitable for pediatric use, it has been shown to have no deleterious effect even on the delicate cilia of the nose. Nor is there any oil to be aspirated and become a potential source of later trouble by accumulating in the lungs (Graef Am J of Path, Vol 21 No 5, Sept, 1935).

Secondary reactions are 'so infrequent and so mild as to be virtually negligible' (Scarano Med Record, Dec 5, 1934), and even in very young children, overstimulation or other undesirable reactions do not occur with the proper dosage.

FIG 1 J M C White, female, age 4 June 5, 1936 Acute rhinitis 11 40 A M Two inhalations of Benzedrine Inhaler



FIG 2 11 50 A M Maximum shrinkage evident



BENZEDRINE INHALER

A Volatile Vasoconstrictor

SMITH, KLINE & FRENCH LABORATORIES, PHILADELPHIA, PA.

VITAMINS IN CANNED FOODS

IV. VITAMIN B₁

• The story of vitamin B₁ is quite long and involved. Properly, it has been fully covered at some length in authoritative dissertations on the vitamins (1)

The original vitamin B of Eijkman and of Funk, while definitely possessed of anti-neuritic potency, is now known to be of a complex nature. Between 1919 and 1926, the vitamin B complex was resolved into vitamins B (B₁) and G (B₂). Subsequent work has indicated the existence of other vitamins in the complex, whose chemical natures or relations to human nutrition are not as yet clearly understood.

As a direct result of many researches on vitamin concentrates, the chemical identity of the crystalline antineuritic factor has recently been described as a derivative of 6 aminopyrimidine (2)

It has been known for many years that vitamin B₁ may be destroyed by heat. In the canning procedure, a number of heat treatments of food may be involved, especially in the thermal "processing" of the product to insure its preservation. In the "process", many foods are subjected to a heat treatment after sealing in the can, to destroy spoilage organisms which may be present on the raw material. In other cases, the food is filled into the cans at a sufficiently high temperature to obtain the same result. Therefore, the question of the

effect of the canning procedures on vitamin B₁ frequently arises.

The times and temperatures necessary for the processing of canned foods are governed by a number of factors, important among them being the pH of the food itself. Highly acid foods require only short heat processes at the temperature of hot or boiling water to destroy spoilage organisms. The so-called "non acid" or "semi acid" products require higher temperatures—usually 240°F (116°C.)

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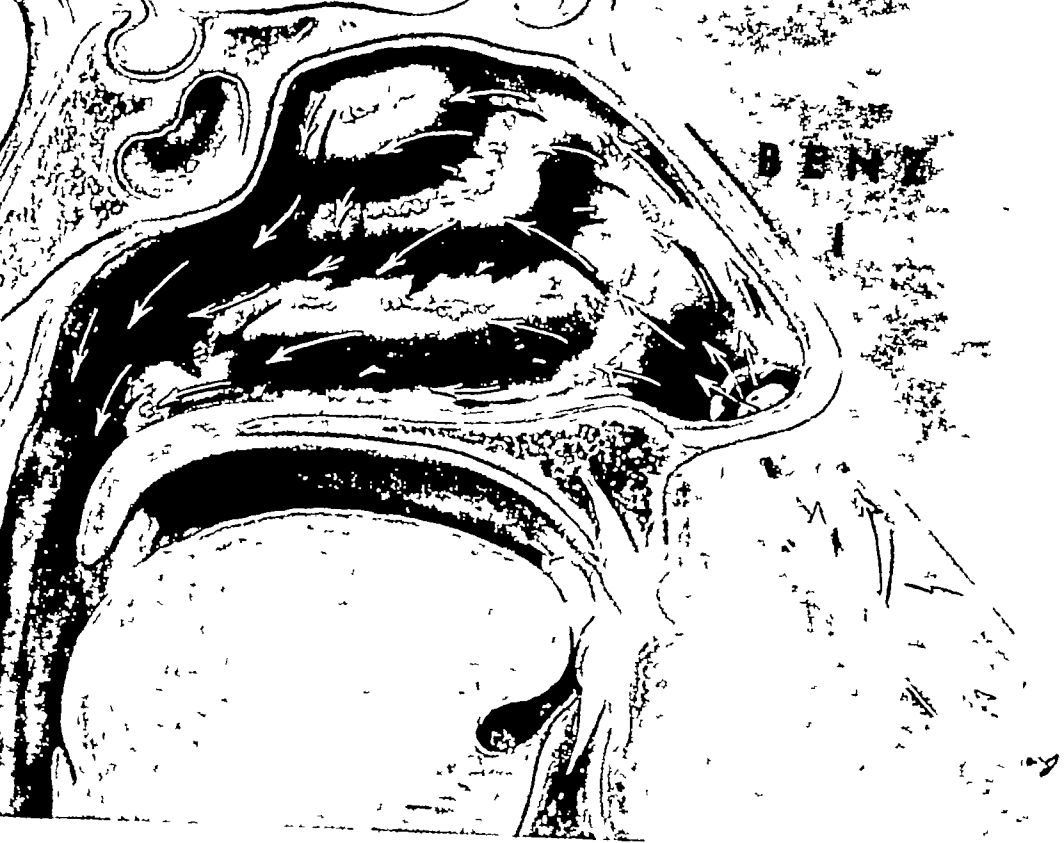
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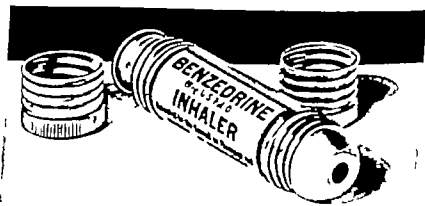
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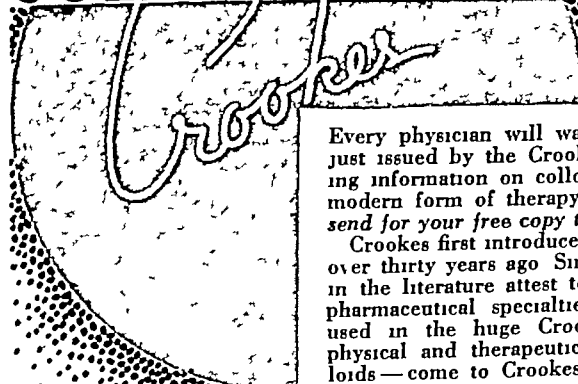
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**THE MENOPAUSE SYMPTOMS, HORMONAL STATUS,
AND TREATMENT**ROBERT T FRANK, M D , MORRIS A GOLDBERGER, M D , and U J SALMON, M D ,
*New York City**From the Gynecological Service and Laboratories of the Mount Sinai Hospital*

The menopause has been a bugaboo to the laity as well as the profession for many generations. Women call it "the change of life" because in their opinion it entails a complete alteration in their physical and psychical being. They anticipate obesity and flabbiness, loss of sex allure, diminution of libido as well as all the signs of rapid aging.

Menstruation ceases with established menopause. After surgical removal of the ovaries or x-ray sterilization the onset of the amenorrhea is abrupt. In the physiological menopause it is frequently preceded by menstrual irregularity, with too frequent and too profuse bleeding, or by increasing intervals between menstruations until the menses finally cease entirely.

Symptoms

The most striking symptom of the menopause is amenorrhea. This is accompanied by a gradual involution of the internal and external genital tract. Locally a shrinkage of the labia minora, a diminution of the sebaceous and mucous secretion, and pallor of the external parts develops. The vaginal mucous membrane shows less of these gross effects than the vulva although there is some dryness, and in the nullipara, a distinctly noticeable shrinkage in the caliber of the vaginal canal. The cervix diminishes in size, the cervical secretion, unless infection is present, becomes scant. The uterine body is thinner, flabbier, and smaller in size. Intramural fibroids especially if of small size involute, frequently to such a degree

that they can no longer be felt. The tubes show the least changes, although on microscopic examination, involution is likewise noted. The ovaries are fibrous, firmer, and smaller. They may still contain follicles, the majority of which rarely reach beyond the early Graafian stage. Only in two instances have I seen full sized mature follicles years after the menopause. Corpora lutea are not found.

The local changes just enumerated may give rise to symptoms. Occasionally dyspareunia is complained of. This applies particularly to women who have never borne children. At the time of the menopause mild urinary symptoms, such as frequency and burning may appear, due to atrophy of the urethral meatus, the thin vestibular epithelium then being more sensitive to moistening by urine (burning, itching). Mild attacks of cystitis are not uncommon. Due to the loss of muscular tone, latent cystocele, rectocele, and prolapse may be more noticeable to the patient and may increase at this time. Spotting after intercourse, due to rupture of adhesions at the fornices or to superficial erosions (senile vaginitis) may cause undue alarm.

The majority of patients complain of neurovascular symptoms which are included under flashes and sweats. These flashes may be extremely frequent, thirty to fifty a day, accompanied by profuse sweats, which awaken the patient at night, and cause head colds and bronchitis. On the other hand, patients of more stable nervous constitution may have no flashes.

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 29, 1936*

or may have them of mild degree and at infrequent intervals. The experienced physician often can predict with some degree of certainty which patients may be expected to have severe symptoms and which are likely to pass through the "critical age" without discomfort. As a rule, the more apprehensive, the more nervous, and the more maladjusted the patient is before the menopause, the more severe the symptoms.

Patients of unstable psychical makeup

TABLE I

AGE	Spont	Surg Castr	Xray	Total
Under 30 yrs	0	2	0	2
30-40	0	8	3	11
40-50	4	17	6	27
50-	7	4	1	12
Total	11	31	10	52
DURATION				
Less than 1 yr	4	11	4	19
1-2 yrs	1	8	3	12
2-4 yrs	3	9	2	14
4 yrs or more	3	3	1	7
FLASHES [†]				
None	3	6	0	9
3-6	0	13	1	14
6-10	2	5	1	8
10-20	3	3	1	7
20-30	3	4	7	14
ARTHRITIS				
None	6	18	5	29
Mild	3	5	2	10
Severe	2	8	3	13
Fatigability	6	6	6	18
Depression	2	4	0	6
Palp & dizzy	6	7	7	20
Headache	8	14	9	31
G I Sympt	7	5	6	18
TREATMENT				
-8000	0	2	0	2
10-14 000	2	0	0	2
14-24,000	2	8	2**	12
24,000-	3*	6	8	17
Not treated	4	15	0	

* One patient, two courses of treatment.

** Two patients two courses of treatment.

are greatly disturbed by the neurovascular symptoms, and in the form of a vicious circle, suffer increasingly from marked nervous manifestations—headaches, transient disturbances of vision, dizziness, fatigability, insomnia, instability of temper, evidenced by flareups, crying spells, and unreasonableness. These symptoms are merely exaggerations of the patient's former response and almost invariably are greatly benefited by humane explanation and reassurance.

Joint pains, commonly designated as arthritis (arthralgia) although there is no absolute proof of actual joint changes, are often noted. The shoulders, elbows,

fingers, and knees are the most frequent sites. Mobility is unaffected. Objective changes are rarely demonstrable. (Table I)

Obese, flaccid women may gain in weight around the menopause. This is usually due to their letup in physical activities as well as to overeating. Careful study of the basal metabolism, blood chemistry, etc. have not substantiated a cause for this increase in weight (Geist, Goldberger, Reiss, and Lande¹). The prompt loss of weight following careful and conscientious dieting likewise confirms the view that the obesity cannot be directly ascribed to the menopause. Thin, spare, and active women, on the other hand, do not change in their weight or general makeup.

Attempts to ascribe hypertension to the menopause, in my opinion, have not been convincing. Hypertension, when present, appears to be unaffected by the onset of the menopause, is unimproved by the treatment effective on the other symptoms, and is most common in the age group which is undergoing the "change of life."

Certain genital diseases are more frequent during the menopause. They include kraurositis vulvae, vulvar carcinoma, and corpus carcinoma, but as yet no direct relationship between the cessation of menstruation and these troubles can be demonstrated. In a large group of early menopause due to surgical castration, comprising hundreds of patients, vulvar and corporeal cancer have not been noted, but two cases of kraurositis have occurred.

The symptoms of the menopause may be summed up as local, neurovascular, and psychical. Their gravity varies according to the psychical and nervous makeup of a given individual, severe in the nervous and labile, less marked in the stolid and well-balanced. Sexual feeling and response is affected in the rarest of instances. Physical fitness, sex attractiveness, and general health are undisturbed in normal individuals, as the menopause does not in itself produce progeria.

Hormonal status

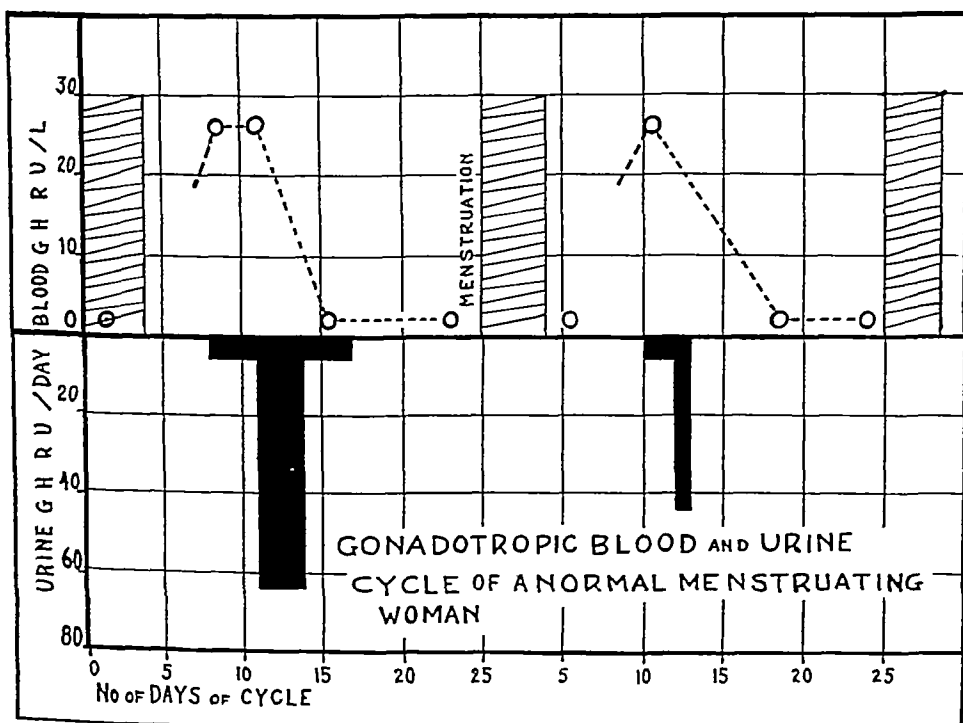
The menopause has been studied for a number of years in our laboratory. We were aware and had drawn attention^{2, 3}

to the fact that approximately half of the patients who are in the menopause still excrete estrogenic substances in their urine Zondek,⁴ Österreicher,⁵ Albright,⁶ and others have shown that in the menopause the gonadotropic factor circulating in the blood and excreted in the urine, is regularly increased. These well-authenticated observations have been the subject

twelfth day only. The same applies to the amount found in the urine excreted, 500 c.c. of urine proving negative except during this same time of the cycle (Chart I of normal woman).

In the series of menopause cases studied, regardless of their causation, gonadotropic hormone was found in increased amount in both the blood and

CHART I—GONADOTROPIC CYCLE IN THE BLOOD AND URINE OF A NORMAL MENSTRUATING WOMAN



Above the base line is shown the number of rat units of follicle stimulating and luteinizing gonadotropic factor per liter of blood.

Below the base line, the amount of gonadotropic factor excreted in the urine per day

of more detailed study by us during the past years

Gonadotropic Factor

(R. T. Frank-U. J. Salmon)

Our observations are based on a series of fifty-two cases of which eleven were physiological menopause, thirty-one surgical castrates, and ten x-ray castrates. Our previous studies⁷ have shown that in the normal, cyclical, menstruating woman, forty c.c. of blood contain an amount of gonadotropic hormone demonstrable by our methods⁸ between the ninth and

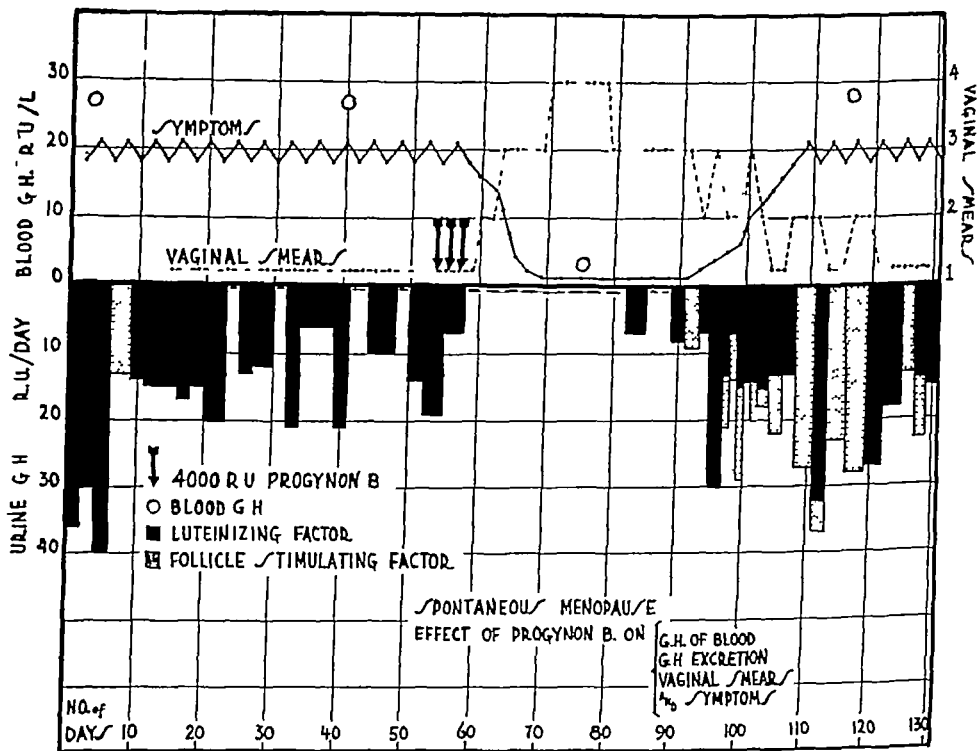
urine. The amounts far exceeded that obtained between the ninth and twelfth day of the cycle in normal women. This excessive and continuous secretion and excretion of the gonadotropic factors has been definitely shown to be due to the unopposed action of the prepuitary when ovarian function has been abolished.⁹ Many investigators have claimed that the gonadotropic secretion present after castration or the menopause, produces merely follicle stimulation in the test animals. Our investigations have shown that this belief is erroneous. By combining acid precipitation with extraction in alkaline

medium, it was noted that the luteinizing factor likewise is present in excess in the menopause. Thus what formerly was considered a typical pregnancy reaction in test animals can be regularly obtained with menopause blood and urine.¹⁰ There is no danger, however, of confusing these menopause reactions with pregnancy tests as the amount of menopause blood or

after onset of the physiologic climax.

As the gonadotropic hypersecretion and excretion is known to be due to the pre pituitary action, unopposed by ovarian control,⁹ it is evident that administration of estrogenic substance in proper dosage should modify the symptoms and discomforts of the menopause. This form of treatment was used on a purely empiric

CHART II—GONADOTROPIC FACTOR IN BLOOD AND URINE IN A CASE OF SPONTANEOUS MENOPAUSE



Above the base line the circles with dots show the amount of gonadotropic factor per liter of blood in rat units, as shown by weekly samples.

Below the base line is the total excretion per day of the gonadotropic factors in the urine.

Acuity of symptoms above base line, in continuous line.

Vaginal smears in broken line.

The time of treatment is indicated by black vertical arrows.

Following treatment, disappearance of symptoms.

Positive vaginal spreads and disappearance of gonadotropic factors from blood and urine after a lapse of twenty-five days, gradual return to pretreatment condition.

urine necessary to produce a full luteinization of the ovary of the test rat, is so greatly in excess of that of pregnancy that no error can occur (Chart II).

The excessive gonadotropic secretion and excretion referred to has been observed by us as early as twenty-four days after castration and as late as ten years

basis by clinicians for many years, but the preparations and dosage available were insufficient. Severinghaus¹¹ was really the first to use approximately adequate dosage. Our method of hormonal control has enabled us to study and evaluate objectively the effect of treatment during and after it was given.

In our series of fifty-two patients, thirty-three cases were subjected to treatment, while coincidentally in the majority the gonadotropic factor was studied in blood and urine. The estrogenic preparation employed was Progynon B, for the liberal and continuous supply of which we are greatly indebted to Dr Stragnell of the Schering Corporation. This form of estrogenic substance was chosen because its absorption is slow and apparently continuous. Although much larger dosage was occasionally used it was soon found that 24,000 R U, corresponding to 120,000 International Units of Progynon B, injected over a period of two weeks, promptly caused a disappearance of both luteinizing and follicle stimulating factors from the blood and urine. This change in hormonal conditions was regularly accompanied by disappearance of the flashes, sweats, headaches, and frequently of the joint symptoms complained of. Patients noted a feeling of increased vigor and well-being.

The duration of relief varied considerably. In a certain number of cases, relief persisted as long as ten to twelve weeks. In the majority of patients, a beginning return of symptoms was noted as soon as two or three weeks had elapsed. In every instance in the special cases studied, the return of symptoms was accompanied by the reappearance in excess of the gonadotropic reactions in the blood and urine.

Vaginal smears Papanicolaou and Schorr¹² noted that the vaginal spreads of human castrates showed distinctive changes. In the great majority, the vaginal spreads were found to be similar to those of the negative phase of the menstrual cycle. When adequate doses of estrogenic substances were injected, a positive or, as they called it, a copulative phase resulted. In considerable number of patients in our series, vaginal spreads were taken by the patients themselves and were examined in our laboratory by a modified staining method,¹³ somewhat simpler than that used by Papanicolaou and Schorr. It was found that while the majority of menopause patients, included in all the three groups, had negative spreads before treatment, a small number showed positive spreads continuously (Fig 1). Nevertheless, the difference between the positive spread of the

untreated and of the treated patient, is sufficiently distinctive to be of diagnostic value*.

As will be evident from the chart, there is an inverse relation between the excess of gonadotropic hormone and the vaginal spreads. Gonadotropic hormone in excess is accompanied by the presence of negative vaginal spreads in the majority of cases, during treatment spreads become strongly positive, gonadotropic factors negative, with the return of the excess of the gonadotropic hormone, the spreads again return to negative. As the technic of taking vaginal spreads as well as their interpretation is so simple, this may prove another method of controlling the efficacy of the therapy, available particularly to the practitioner.

Estrogenic factor

(Morris A. Goldberger)

In a number of previous publications^{2, 3} we mentioned that the estrogenic factor could be found in some cases years after the physiological menopause had developed. In our present study it was noted that considerable, and at times large quantities of estrogenic factor, occur in the blood and urine of surgical castrates. A normal, cyclical, menstruating woman shows at least 1 M U of estrogenic factor in forty cc of blood in the last week preceding menstruation.² Twice during the cycle, namely, approximately at the time of ovulation, as well as three or four days before menstruation takes place, large quantities of estrogenic factor are excreted in the urine, throughout a cycle the average menstruating normal female excreting a total of 1500 M U (Chart III).

The frequent occurrence of estrogenic factor in the blood and urine of casual specimens obtained from human castrates,¹⁴ led us to study two castrates over a continuous period. As the appended graphs show, the excretion of estrogenic factor is not inconsiderable. (Chart IV).

It also seemed of importance to determine whether the large quantities of estrogenic factor (Progynon B) injected for the treatment of menopause symptoms,

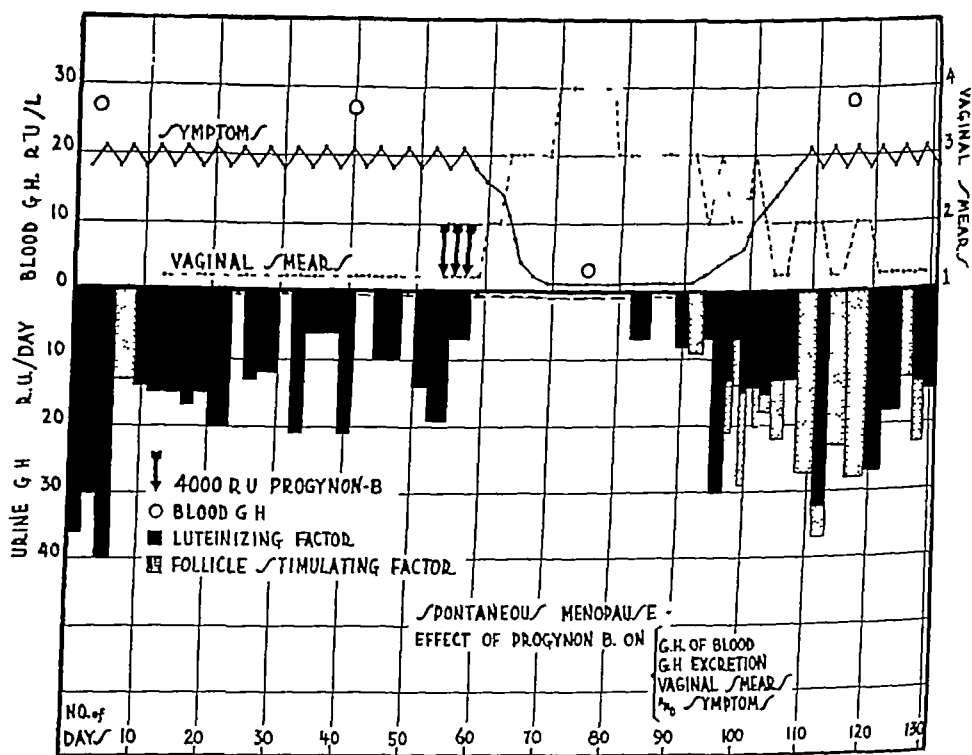
*Although some untreated patients show purely squamous epithelium (positive phase) the nuclei of these epithelial cells are distinctly larger than those found in the treated patients.

medium, it was noted that the luteinizing factor likewise is present in excess in the menopause. Thus what formerly was considered a typical pregnancy reaction in test animals can be regularly obtained with menopause blood and urine.¹⁰ There is no danger, however, of confusing these menopause reactions with pregnancy tests as the amount of menopause blood or

after onset of the physiologic climax.

As the gonadotropic hypersecretion and excretion is known to be due to the pre pituitary action, unopposed by ovarian control,⁹ it is evident that administration of estrogenic substance in proper dosage should modify the symptoms and discomforts of the menopause. This form of treatment was used on a purely empiric

CHART II—GONADOTROPIC FACTOR IN BLOOD AND URINE IN A CASE OF SPONTANEOUS MENOPAUSE



Above the base line the circles with dots show the amount of gonadotropic factor per liter of blood in rat units, as shown by weekly samples

Below the base line is the total excretion per day of the gonadotropic factors in the urine

Acuity of symptoms above base line, in continuous line.

Vaginal smears in broken line.

The time of treatment is indicated by black vertical arrows.

Following treatment, disappearance of symptoms

Positive vaginal spreads and disappearance of gonadotropic factors from blood and urine, after a lapse of twenty-five days, gradual return to pretreatment condition

urine necessary to produce a full luteinization of the ovary of the test rat, is so greatly in excess of that of pregnancy that no error can occur (Chart II)

The excessive gonadotropic secretion and excretion referred to has been observed by us as early as twenty-four days after castration and as late as ten years

basis by clinicians for many years, but the preparations and dosage available were insufficient. Severinghaus¹¹ was really the first to use approximately adequate dosage. Our method of hormonal control has enabled us to study and evaluate objectively the effect of treatment during and after it was given.

and fruit was taken, dehydrated, and extracted. It was found that this meal contained thirty-three M U and that consequently the average individual ingests from 75 to 100 M U of estrogenic substance daily. Whether this amount is sufficient to supply enough estrogenic substance to account for what is found in a castrate, is by no means certain.

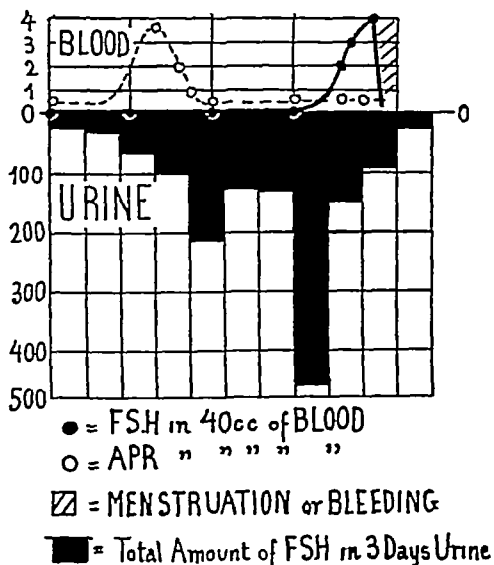
It therefore behooves us to look for another source. As yet our studies have not lead to decisive results. Whether synthesis of cholesterol by the liver, a substance closely related to the estrogenic hormones, will be found as the source, must as yet remain an open question.

Treatment

Out of fifty-two patients, thirty-three received treatment for their symptoms. The severest symptoms were complained of by the x-ray castrates.

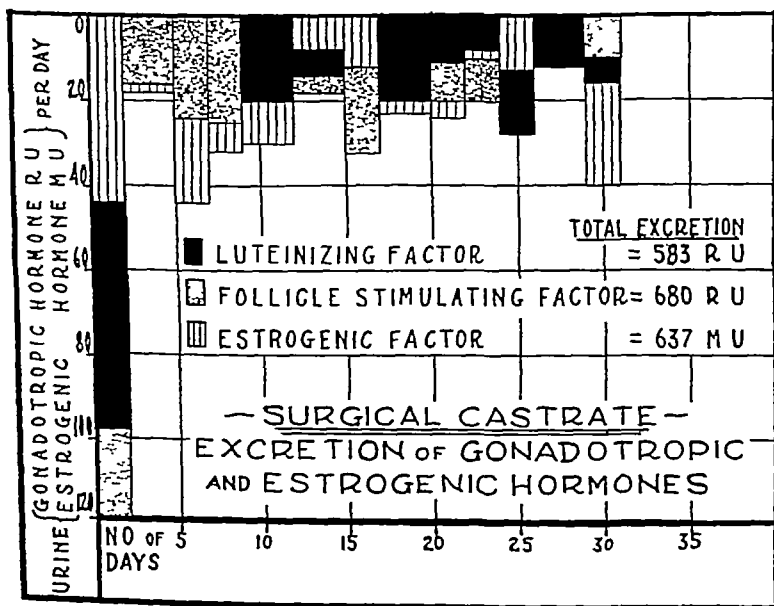
The treatment given in the majority of cases consisted of the intramuscular injections of Progyon Benzoate (dihydro-folliculin benzoate) in ampules supplied

CHART III

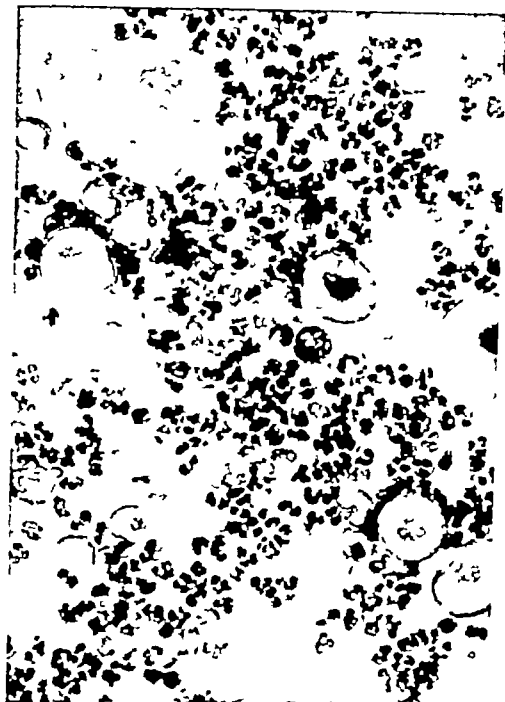


Normal, fertile, menstruating woman. Showing preputiary and female sex hormone blood cycle and estrogenic factor excretion in the urine.

CHART IV



Surgical castrate showing excretion of both gonadotropic and estrogenic factors. No blood examination is charted. This surgical castrate excreted not only luteinizing and follicle stimulating factor but 637 M U of estrogenic factor during a month, less than $\frac{1}{2}$ the amount that a normal menstruating woman would excrete. The source of the estrogenic factor is not determined.

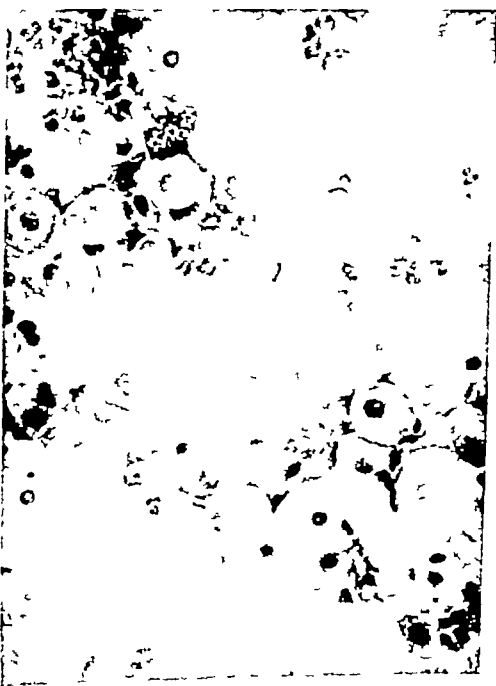


NEGATIVE SMEARS

were entirely utilized or were excreted, at least in part. Chart V shows the large amounts which appeared in the urine during treatment

While it is readily understandable that small quantities of estrogenic factor might be retained and deposited in depots before castration, yet after the elapse of a certain time, this residuum should be exhausted by utilization or excretion. As up to the present, no other sources for the production of estrogenic factor, except the ovary and placenta have been discovered, the question naturally arises where the estrogenic factor found by us years after castration, comes from

One possible source for the ES was mentioned by one of us a number of years ago, namely the food supply¹⁵. As most vegetables and many other common food products are known to contain estrogenic factor, it seemed worthwhile to determine how much estrogenic activity was contained in an average meal. A sample lunch from the hospital menu, consisting of meat, bread, milk, butter, vegetables,



BEGINNING REACTION



POSITIVE SMEAR

Fig 1 Human vaginal smears. These smears were taken by the patients themselves, fixed with methyl alcohol and stained with 1 per cent aqueous Fuchsin. Positive smears but showing larger nuclei not infrequently are noted in untreated castrates.

oil may cause subcutaneous and intramuscular indurations which in rare instances are followed by granulomatous masses which have been known to break down and suppurate

Recently, through the courtesy of the Schering Corporation, we have been able to use, in a few selected cases, tablets of Progyon with as much as 1,000 "active" RU. These tablets we understand are not yet on the market, will probably prove to be expensive, but if manufactured in quantity, may become available. This method of medication should prove of far greater value than the giving of estrogenic factor by injection as the patient can take them as indicated. Our hormonal control shows that they are efficacious.

Finally the question cannot be avoided as to whether constant medication with large dosage of estrogenic factor may not entail a risk of favoring the production of cancer, as many investigations¹⁶ have shown the close chemical and biological relation of estrogenic and carcinogenic substances. This danger appears largely theoretical for, during pregnancy for example, huge quantities of estrogenic substance are constantly circulating in the blood and excreted in the urine. Time alone will show whether this possible potential danger is valid.

Summary

A study of fifty-two cases in the menopause—eleven physiological, thirty-one surgical castrates, and ten x-ray castrates—is reported. Of these patients, nine had no or only minimal symptoms.

1 The main symptoms of the menopause, irrespective of its origin, are amenorrhea, local pelvic atrophies, and neurovascular disturbances. In addition arthralgias, fatigability, depression, palpitation and dizziness, headaches, and gastrointestinal disturbances are complained of by a number of patients. The

age of the patients, the duration of the menopause play no decisive role. On the other hand, the nervous makeup and constitution are of great importance. With few exceptions, nervous and neurasthenic patients have the most violent symptoms. Neither obesity, hypertension, nor diminution of libido can be ascribed to the menopause.

2 Hormonal studies show that cessation of ovarian function is followed by persistent over-secretion (and excretion) of both gonadotropic factors of the prepituitary. Our studies likewise show that injection of the estrogenic factor in proper dosage, temporarily overcomes the excessive prepituitary action with rapid disappearance of these factors from the blood and urine. In at least fifty per cent of cases after the menopause and including surgical castrates, considerable quantities of estrogenic factor circulate in the blood and are excreted in the urine. The source of the estrogenic factor after the removal of the ovaries has not as yet been determined although the ingested food probably accounts for at least some of the factor found. The patient's vaginal spreads also give valuable objective information as to the effect of therapy.

3 Thirty-three patients were treated, some repeatedly, by means of Progyon B. The dosage finally selected as most adequate proved to be 24,000 RU (120,000 International Units) 4,000 RU given at a time (2 ampules) on alternate days, intramuscularly. The relief experienced from a single course of treatments lasted from one to eight weeks, the average being three to four weeks. No permanent relief results.

4 It is anticipated that when tablets of estrogenic substance, to be taken by mouth, are generally available, oral therapy will prove to be the best form of treatment.

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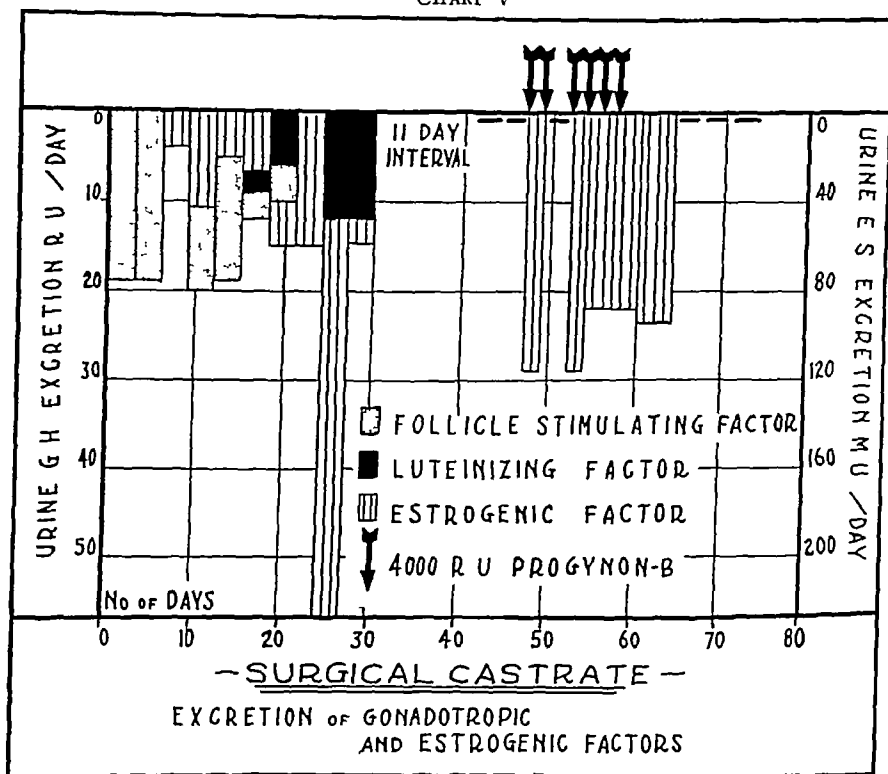
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to us by the Schering Corporation of New Jersey. Experimentation with various dosages varying from 8,000 to 36,000 RU in mazola oil, lead to the adoption of a series of injections given every other day, in dosage of 4,000 RU totaling 24,000 RU. This dosage has proved adequate in rapidly abolishing the flashes and also in controlling the fatigability,

with the return of symptoms. A number of the patients have received two and three courses of the treatment at such intervals as the gravity of the symptoms warranted. However, there is no permanent and lasting improvement.

It thus appears that rapid, temporary relief of the main symptoms complained of in the menopause, can be obtained

CHART V



Surgical castrate showing excretion of gonadotropic and estrogenic factors before treatment as well as estrogenic factor excreted after treatment. Only a very small amount of estrogenic factor is excreted after treatment.

depression, headaches, palpitation, and dizziness, as well as some of the gastrointestinal symptoms complained of. In some patients the joint symptoms also were relieved.

The duration of relief varied considerably, the shortest period being approximately one week, the longest eight weeks, the average around three to four weeks. Following the treatment, the excess of gonadotropic factor disappears from the blood and urine within a few days, the vaginal smears becoming strongly positive. All of these controls slowly return to the pretreatment type in close relation

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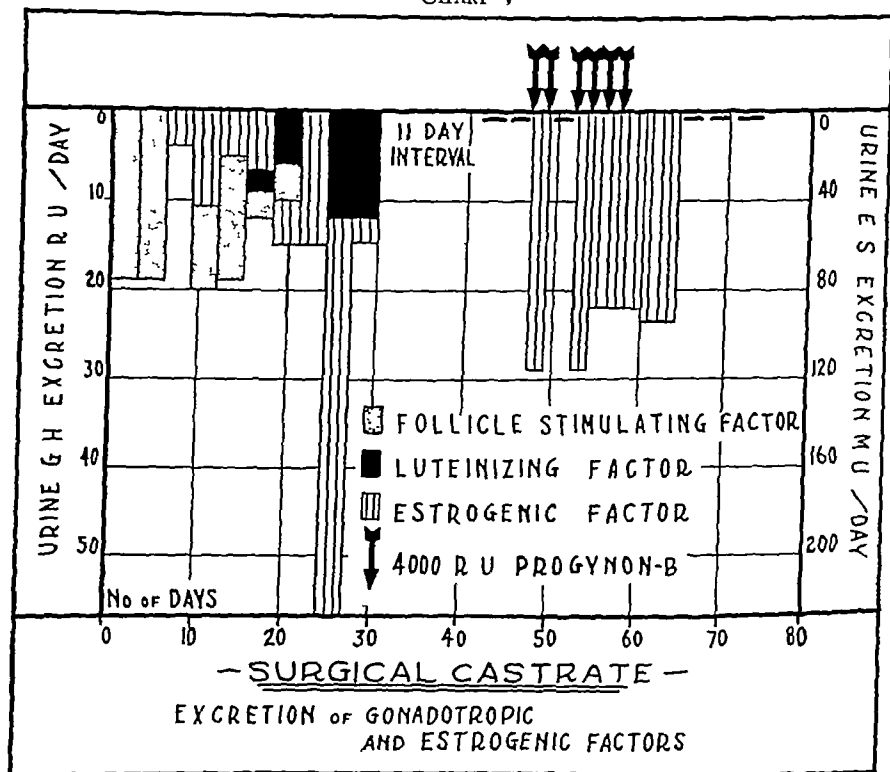
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sary The incision to open the bed for the graft should be made to the periosteum of the frontal bone, and it should be properly placed as to height, with a little arching (Fig 1 and 2) In case a fellow brow will not furnish a good graft, the occipital or temporal region of the scalp will furnish a rather good detached graft, which can be trimmed by the patient when the hairs get too long Such a graft is to be regarded not as first choice, but as a fairly good substitute for brow

For eyelashes a graft from the lower part of the brow can be used. The brow hairs are too far apart for good eyelashes and direction is not perfect, but they do rather well. Sometimes, with the graft

surface skin, it is not necessary that the razor graft contain only epithelium as in eye socket restoration So the graft need not be taken with the degree of skill that is called for when the surgeon sets out to get only epidermis with no true skin and with no defect Such a razor graft as Thiersch took, with a little connective tissue, is permissible This graft is never ideal for lid surface, but it will match the burned face better than true skin from another part of the body, such as the arm, thigh or abdomen

For a granulating area in the malar region, the grafts of Reverdin (pinch grafts) still have a place. A thick mat of new-formed tissue, such as may follow the

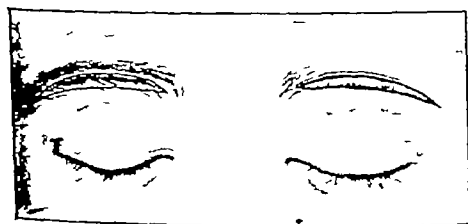


Fig 1 Transplantation of part of right brow to form left brow Outlining incisions in right brow Skin in left brow region has been incised to periosteum

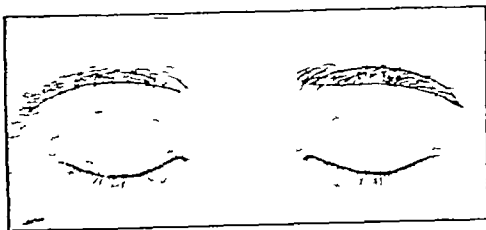


Fig 2 Graft from right brow has been turned about and placed for left brow Fine silk sutures have been tied

from the lower part of the eyebrow, skin below the brow should be carried along for correction of a defect of an eyelid In some cases it is possible for the surgeon to rob one lid margin of part of its cilia to furnish hairs for another It may even be justifiable in some cases for the surgeon to shorten the palpebral fissures so that cilia can be furnished

In ectropion the need is for suitable skin, and a good bed for the reception of a graft results from proper dissection⁷ A detached flap of upper eyelid skin is easily the best, and usually such skin is available. Next best is skin from the cephaloauricular angle. Dissection of skin from the angle is easy, and the wound can be satisfactorily closed without undermining⁸ In some cases of very severe burns neither the upper eyelid skin nor the cephaloauricular angle skin is available in sufficient quantity For such rare cases epidermis will answer⁹ It is best taken from the outer aspect of the thigh, where the skin overlies the fascia lata For lid

destruction of cancer, makes a poor bed for a large graft, but if many little islands of skin are placed on the surface some of them will live and assist in the process of skin formation Considerable contraction occurs in the healing process, but it creates little deformity in the convex surface of the malar region The eyelids may be stretched longitudinally by cicatricial contraction, but the palpebral fissure can be shortened when the period of contraction is passed

For filling in depressions a number of vital structures have been used Those ordinarily adopted have been fat, muscle, bone, cartilage, and fascia Depressions about the orbit are very likely to be associated with massive scar tissue formation so that when the dissection is made to insert filling, the cavity wall is made up wholly, or in part, of new formed connective tissue Either muscle or fat, pedunculated or non-pedunculated, is liable to break down in such a cavity and undergo frank contraction so that a de-

SOURCES OF GRAFTS FOR PLASTIC SURGERY ABOUT THE EYES

JOHN M. WHEELER, M D, *New York City*

Wisdom in the choice of grafts is essential for best results in plastic surgery in the eye region. There is room for difference of opinion, but for me choice of material is rather well-formulated, and I should like to make suggestions out of experience.

When Reverdin¹ in 1869 reported that he had successfully grafted little pieces of skin on a granulating surface and that the grafts had lived, he made a valuable contribution to surgical science, and he placed before plastic surgeons a valuable idea, namely, that pedicles are not always necessary for the life of grafts. Then Ollier,² Thiersch,³ Wolfe,⁴ and others in quick succession demonstrated that grafts of epidermis, dermis, and other tissues could be successfully transplanted without pedicles. With authority Tagliacozzi⁵ had offered his dictum that in order to live a graft must have an attachment to nearby tissue, that it must have a pedicle. And in spite of repeated demonstrations of life and well-being of independent detached grafts, the presumption of value of pedicle attachment has persisted to the present time. Witness the idea that is offered to us by Esser,⁶ the renowned Dutch plastic surgeon who is practicing his art in the Principality of Monaco. He assumes value of a vascular attachment for a skin flap. Instead of dissecting up a pedicle of skin he dissects out an important artery for a pedicle and buries it under skin to carry nourishment to a skin flap. With the artery go veins, nerves, and lymphatics, surrounded only by loose protective tissue. His conception is interesting, but he is wrong, it seems to me, in assuming that a vascular pedicle is ordinarily necessary for the life of a graft, and he accepts a serious handicap in operative technic, and calls on himself for unnecessary dissection, and secondary operations, giving his patient unnecessary facial scars.

In the face of high authority to the contrary, I should advocate the use of detached grafts in preference to attached flaps, whenever it is feasible for the

surgeon to choose. In so doing the surgeon can select a graft best suited to its use and usually of such size and shape as are needed.

In a small proportion of cases pedicles are important. An example is found in coloboma of the eyelid, which calls for a skin flap with conjunctival lining and a broad pedicle. The flap with its lining is simply advanced from the malar and temporal regions to its new position.

A pedunculated flap is called for if a proper bed cannot be prepared to receive a skin graft. A good example is furnished by a deep wound below the eye, with bone injury near the orbital margin and with a quantity of scar tissue that has partially filled in the depression. Here only a thick pedunculated flap can be relied on.

Another condition that demands a skin flap with pedicle is an actual hole into the nasal cavity, where there is no bed to receive the graft. In this case the pedunculated flap should more than cover the hole, and it should carry with it a patch of epithelial lining, the right size to accurately fit into the hole.

When used, pedunculated grafts should be from neighboring parts. In my opinion true skin from distant parts, such as the arm, forearm, thigh, abdomen or chest is never best.

For restoration of a socket there surely is no need for a pedicle. A complete lining of epithelium without underlying connective tissue is required. For the purpose I should choose epidermis from the outer aspect of the thigh, without glands or hair follicles and without perforation.

For eyebrow restoration a graft from a fellow brow is best. If there is plenty of brow on one side a full-thickness graft can be excised a few mm wide and of sufficient length. The brow tissue above and below can be brought together with very little undermining, and very little injury. The graft is turned about and placed in its bed with the hairs slanting in the right direction. No pedicle is neces-

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 29, 1936*

from each cephalauricular angle supplies the new skin surface below the eyelid graft. These pieces of skin will readily adapt themselves to the needed shapes, and the outlines of the grafts shown in Fig 6 illustrate the changes in shape

which may be called for. Often deformities about the eyes need different sorts of procedures and a liberal supply of ingenuity is needed.

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Discussion

DR. WEBB W WEEKS, *New York City*—It was my good fortune to serve under Dr Wheeler for a while at Fort McHenry after the war in 1919. It was there he thought out, planned, and devised the best methods for the repair of a great variety of deformities about the eye. The base for his future work and great success in plastic surgery was in a great measure laid.

You have here had a glimpse of what extreme patience and care, deliberately planned and dextrously executed work can accomplish. Quite naturally I have tried to closely follow his teachings. While in France I saw much of the French sliding flaps and the Italian pedicle grafts which seemed tolerably good at the time, especially where tissue loss in the area grafted was extensive. Yet the contrast was remarkable where a free graft was used as done at Fort McHenry. You occasionally see now a disfiguring case where for more or less superficial scars causing an ectropion a Wolfe-Krause graft is used from the arm or thigh.

The Ollier-Thiersch graft from the lid or back of the ear has always served well in the repair of lid deformities. One trick of Dr Wheeler's has done well in the repair of depressions in fractures of the malar and maxillary bones. The fascia over the masseter with fat was hinged back over the depression while a regular skin graft was placed over it.

The Ollier-Thiersch graft from the thigh usually includes lining a socket for an artificial eye and covering the walls of an exenterated orbit. Mucus membrane grafts from the lip and buccal surface of the cheek give good surfaces and heal well in excision of the posterior portion of the lid margin for trichiasis, for repairing a symblepharon or supplanting a dry, atrophic and irritating bulbar mucus membrane seen in trachoma and essential shrinking of the conjunctiva in pemphigus.

Dr Wheeler speaks of the Reverdin graft for the poorly nourished scars after treat-

ment for epitheliomas in the lid and adjacent cheek areas. This is a very helpful idea exemplified in a recent case on the Bellevue Hospital service where several sliding grafts gave only a partial repair in spite of free excision and incisions into the indurated area.

Scrotal grafts for ectropion of the lids have been used with good takes, texture, and color by Dr Hughes of the Infirmary staff.

DR. JOHN F GIPNER, *Rochester, N Y*—In most undertakings and especially in surgical procedures, the simplest methods are usually the best. To Dr Wheeler goes the credit for pioneering in and popularizing simple and effective surgical procedures for the plastic repair of defects of the orbit, lids, and brow.

During the period of my ophthalmological training I had considerable experience helping Dr W L Benedict perform pedicle graft lid plastics. Secondary operations were frequently necessary. In his search for better methods, Dr Benedict became one of the first to use detached grafts as advocated by Dr Wheeler. As a natural result of my early training, I have followed Dr Wheeler's technic in my own practice. His surgical procedures, his choice of grafts, and his reasoning justifying his ideas on the subject have always appealed to me as being eminently sound and right.

The technic for using a thin epithelial graft in the restoration of contracted socket was published by Dr Wheeler fourteen years ago. The important point to be remembered in cutting the graft is to take only the superficial layers of the skin of the outer thigh without any connective tissue, glands or hair follicles. When such a graft takes, the epithelium lining the socket is thin, pinkish-white in color, and free from offensive secretion and hairs which will be present if the graft is cut too thick.

For the correction of ectropion after thorough removal of all scar tissue, the use



Fig 3 Large pigmented mole below right eye Primary incisions for excision

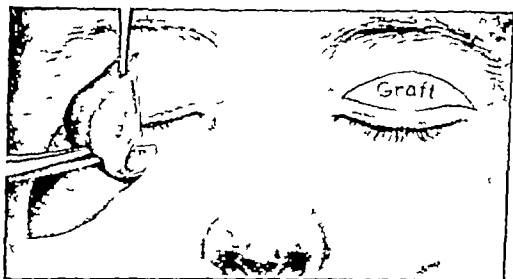


Fig 4 Dissection of skin occupied by pigmented mole Graft from left upper eyelid outlined

pression is re-established Bone and cartilage, even if fitted accurately are liable to become poor fits as changes in the wall of the cavity take place These grafts are insecure and often annoying to patients The one tissue that I have found absolutely satisfactory is fascia lata If the cavity is carefully dissected so its limits are correct, the fascia lata filling can be made to do its exact duty The tissue is of such a low grade that it will exist in contact with any sort of tissue and it will remain indefinitely with very little change provided the wound over it is secure It is never annoying to patients after the healing process and it adapts itself to cavities of any shape.

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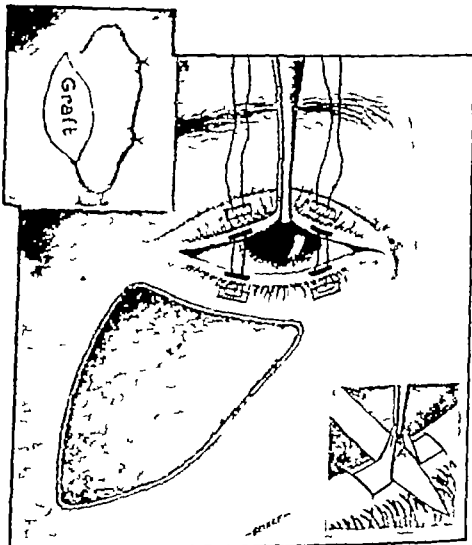


Fig 5 Excision of skin complete. Preparation for intermarginal adhesions Graft from right cephaloauricular angle outlined (upper inset) Excision of epithelium from lid margin in preparation for one of the intermarginal adhesions (lower inset)

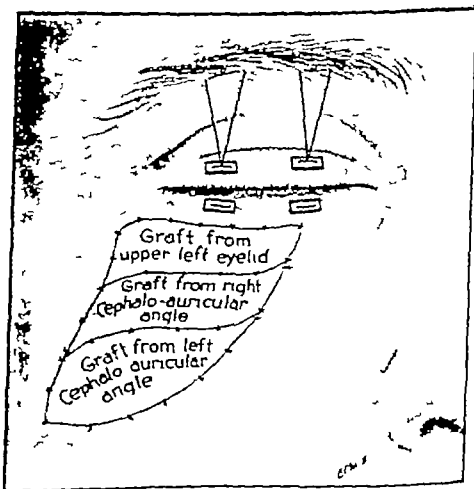


Fig 6 Sutures have been tied to hold denuded areas on lid margins in apposition to form two intermarginal adhesions for the support of the lower eyelid Detached grafts have been placed to cover areas formerly occupied by pigmented mole.

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- 8 Idem *Southern Medical Journal* 29 377, 1936
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Discussion

DR. WEBB W WEEKS, *New York City*—It was my good fortune to serve under Dr Wheeler for a while at Fort McHenry after the war in 1919. It was there he thought out, planned, and devised the best methods for the repair of a great variety of deformities about the eye. The base for his future work and great success in plastic surgery was in a great measure laid.

You have here had a glimpse of what extreme patience and care, deliberately planned and dextrously executed work can accomplish. Quite naturally I have tried to closely follow his teachings. While in France I saw much of the French sliding flaps and the Italian pedicle grafts which seemed tolerably good at the time, especially where tissue loss in the area grafted was extensive. Yet the contrast was remarkable where a free graft was used as done at Fort McHenry. You occasionally see now a disfiguring case where for more or less superficial scars causing an ectropion a Wolfe-Krause graft is used from the arm or thigh.

The Ollier-Thiersch graft from the lid or back of the ear has always served well in the repair of lid deformities. One trick of Dr Wheeler's has done well in the repair of depressions in fractures of the malar and maxillary bones. The fascia over the masseter with fat was hinged back over the depression while a regular skin graft was placed over it.

The Ollier-Thiersch graft from the thigh usually includes lining a socket for an artificial eye and covering the walls of an exenterated orbit. Mucus membrane grafts from the lip and buccal surface of the cheek give good surfaces and heal well in excision of the posterior portion of the lid margin for trichiasis, for repairing a symblepharon or supplanting a dry, atrophic and irritating bulbar mucus membrane seen in trachoma and essential shrinking of the conjunctiva in pemphigus.

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Fig 3 Large pigmented mole below right eye Primary incisions for excision

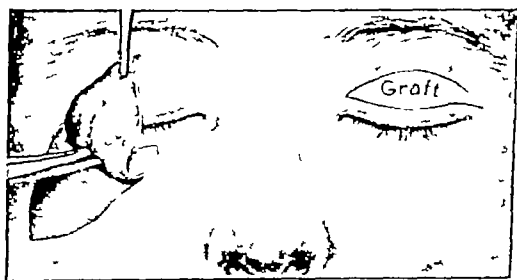


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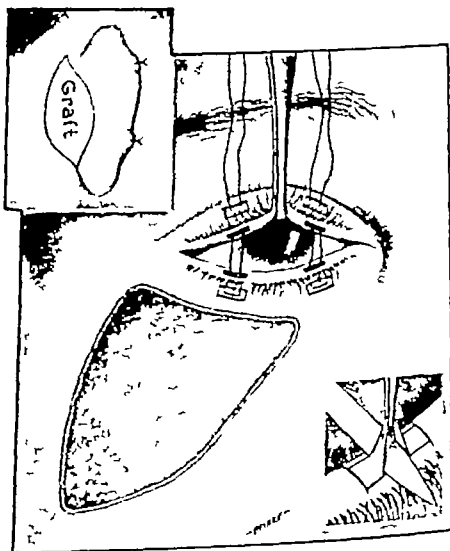


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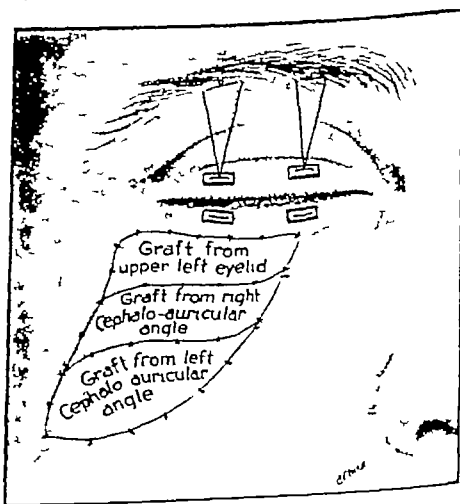


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For the correction of ectropion after thorough removal of all scar tissue, the use

of a full thickness, detached graft from an upper lid gives the best result.

Most of these grafts are successful. However, should the graft fail to take, one can use skin from the other upper lid or skin from the cephaloauricular angle. If this should be impossible, epidermis from the thigh can be used. Even after repeated failures, the loss of a full thickness graft or a Tiersch graft is never as troublesome as the loss of a pedicle graft. The following case illustrates this point.

On March 5, 1935, I operated a woman who had a large contracted scar of the left upper lid and brow resulting from a gasoline burn. The cornea was ulcerated from exposure to the air due to the fact that the lid was pulled up off the eyeball and was at no time in contact with the globe. After uniting the lids and dissecting out the scar tissue, a full thickness graft from the right upper lid was emplaced. Eight

days after the operation the graft was healthy and the result seemed satisfactory.

This woman was subject to attacks of dementia and had on several occasions been confined to a State Hospital. During a spell of dementia she completely destroyed the graft by clawing out most of the central portion with her fingernails. As healing progressed, more scar tissue developed so that within four months time the upper lid was again retracted upward and off the eyeball. On October 5, a second operation was performed using a Tiersch graft from the left thigh and the result was satisfactory.

Had the first repair been made with a pedicle graft, the problem of secondary repair would have been difficult. By using Dr. Wheeler's method, as long as suitable skin can be found on the patient, one may be confident that an ultimate correction will be secured, even though unforeseen reverses are encountered.

WHY APPENDICITIS FATALITIES ARE FALLING

The rising tide of deaths from appendicitis has finally been stemmed, notes the *Statistical Bulletin* of the Metropolitan Life Insurance Company. In the past five years the standardized death rate from this cause among Metropolitan Industrial policyholders, ages 1 to 74, has dropped steadily from 14.3 per 100,000 in 1931, to 11.5 in 1935, a decrease of twenty per cent. Among white male policyholders the rate last year, 13.5 per 100,000, was the lowest recorded in this group since 1919, particularly significant is the fact that white females in 1935 registered their lowest rate in a quarter of a century. Comparable data for the general population, available only to 1934, show the same general downward tendency.

Provisional figures for the first seven months of the current year point to the conclusion that the appendicitis death rate for the insured group as a whole will drop to even a lower level in 1936 than in the preceding year.

What factors have been at work to effect this recent improvement in mortality? This is a question of considerable current interest in the medical and public health fields, as is evidenced by the prominence given the subject in the periodical medical literature and at the medical society meetings throughout the country. Until very recently physicians have been stirred by the paradox of a decreasing operative mortality and a rising total appendicitis death rate. Whatever were the forces acting to raise the death rate for at least two decades beginning with 1911, it appears that now the trend of the mortality from this disease is definitely downward.

The lessened toll of deaths from ap-

pendicitis in recent years may be attributed in part to the widespread educational campaign conducted through the cooperation of public health officials, medical associations, insurance companies, retail druggists, school officials, and civic organizations. The educational attack against the excessive mortality from the disease has been centered on two factors which, obviously, were responsible for many deaths. The use of laxatives in the presence of abdominal pain, and the delay in hospitalization. The excellent statistical studies made by the health authorities in Philadelphia showed that, in recent years, only one in sixty-four of the appendicitis patients who had not received laxatives died, of those who had received one laxative, one in eighteen died, and of those who received more than one, one in eleven died. Similarly, the mortality of cases admitted to the hospitals forty-eight to seventy-two hours after the onset of the attack was about three times that for cases admitted within twenty-four hours.

Certainly the medical profession has made its contribution to the recent reduction in the appendicitis death toll. Everywhere physicians and surgeons have been critically analyzing their experience, and these investigations have undoubtedly led to improved practices. From the current literature it is clear that the disease is being recognized more and more readily, that surgical skill and judgment have reached higher levels, especially in the treatment of spreading peritonitis, that the types of anesthesia being used are resulting in a more favorable experience, and that preoperative and post-operative care have been improved.

Symposium: Silicosis

PATHOLOGY OF THE PNEUMOCONIOSES

LEROY U GARDNER, M D , *Saranac Lake*

*From the Saranac Laboratory for the Study of Tuberculosis of the
Edward L Trudeau Foundation*

Pneumoconiosis is a *condition* in the lungs resulting from the inhalation of dust. Unless the dust causing it has specifically irritating properties this condition cannot be of clinical significance and it should not be called a disease. Only two industrial dusts are now known to cause symptomatic *disease*, these are silica and asbestos. Animal injection experiments indicate that these two substances can cause progressive fibrosis in various tissues but that the reaction to even excessive quantities of other dusts is negligible.

At the present time any discussion of disease-producing dusts is narrowed to silica and asbestos. To produce effects both must be inhaled every day in high concentrations over a period of years. After exposures of five to twenty years scar tissue forms that may interfere with function but this is often not sufficiently severe to disable the individual or even prevent him from performing his habitual work unless infection complicates the picture. Unfortunately the development of silicosis seems to predispose an individual to tuberculosis. This comes about either through the reactivation of a latent focus of pre-existing tuberculosis or it may be due to a new infection from the outside. Asbestosis may have the same effect but it is by no means proven that it is responsible. Fewer cases of asbestosis than die show a complicating tuberculosis than is true of silicosis.

The diagnosis of either silicosis or asbestosis depends upon a history of an adequate exposure to the specific type of dust, a physical examination, and the presence of characteristic changes in a roentgenogram of the chest. This communication has to deal primarily with the pathological reactions responsible for the shadows seen in the x-ray film. Regardless of the history of exposure a diagnosis of silicosis is not warranted until the film

reveals the presence of multiple small nodular shadows in the parenchyma of both lungs. The fibrous nodule is the pathognomic lesion of silicosis and without it no diagnosis is possible.

The various manifestations of simple silicosis and silicosis with infection have been fully discussed in a report by a committee, of which the writer was a member, published in the *U S Public Health Reports*, August 2, 1935. The following tabulation of the lesions and the shadows which they cast upon an x-ray film is taken from this report.

Simple silicosis

- 1 Discrete nodulation
- 2 Conglomerate disease associated with discrete nodulation

Silicosis with infection

The following manifestations of infection are present upon a background of discrete nodulation.

- 3 The primary complex of childhood tuberculosis
- 4 Localized foci of healed adult type of tuberculosis situated in the apex of other portions of the lung
- 5 Aspiration or bronchogenic tuberculosis, either productive or exudated in type
- 6 Miliary tuberculosis
- 7 Perinodular tuberculosis
- 8 Chronic silico-tuberculosis

Insufficient exposures to silica may cause a certain amount of exaggeration of the linear shadows cast by the vascular tree, and enlargement of the tracheo-bronchial lymph nodes. These changes are not specific for silica, they may be produced by inhaling other dusts by infection and by heart disease. Since all of these factors may be operative upon the person who works in a silica industry, one is not justified in attributing the roentgenologic appearances to the silica. Let it be emphasized that without nodula-

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 28, 1936*

tion a diagnosis of silicosis is unwarranted at the present time

Simple discrete nodulation is not disabling and does not cause subjective symptoms. Where conglomerate disease complicates nodulation there is usually dyspnea which may be so severe as to incapacitate for work. Infection, if inactive, has the same effect. If active, the infection obviously requires treatment and the man should be hospitalized for his own good and the protection of his fellow-workmen. A person with simple discrete nodulation may be allowed to continue his regular work as he is not incapacitated and particularly as industries enlightened enough to discover such conditions in their employees are taking steps to eliminate their dust hazards.

The pathological changes responsible for the roentgenological appearances just described develop in the following manner:

1 *Exaggerated linear markings*, as already mentioned, are not specific for silicosis; they may be produced by many forms of irritation. The shadows are cast by heavy accumulations of pigment and slight chronic inflammatory reaction in the areolar coats of the pulmonary blood vessels. This reaction develops primarily in and about the lymphatic trunks that course through the walls of these vessels. Similar changes occur about the lymphatics of the bronchi and those that traverse the connective tissue septa between pulmonary lobules. When caused by silica, such inflammation tends to be heavier and more fibrous in character, and associated with it there are minute nodules of fibrosis in the intrapulmonary and tracheobronchial lymphoid tissues. When such reaction has progressed sufficiently it may be manifested in the roentgenogram as beading along the trunks and a widened mediastinal shadow. The effect of such changes is to compress and partially obliterate lymphatic channels. This interferes with free elimination of inhaled foreign bodies but it has no effect upon respiratory function. In a group of iron miners well-marked linear exaggeration was present after an average exposure of eighteen years. Men who had worked in rock dust (silica) showed the same amount of reaction after an average exposure of 11 years. A perilymphatic reaction caused by silica does not progress to parenchymatous nodulation without further exposure to dust. Since this change may be produced by so many forms of irritation, it is often impossible to

determine its origin. After autopsy, microscopic sections may reveal characteristic silica reactions but frequently even such evidence is difficult to evaluate.

2 *Simple discrete nodulation*, uniformly distributed throughout both lungs, is the pathognomic manifestation of silicosis. It is produced by nodules of laminated hyaline fibrous tissue thickly scattered through the parenchyma of the lung. Such lesions develop in lungs whose lymphatic drainage system has been damaged by previous perilymphatic changes. The phagocytes are no longer able to carry inhaled dust particles out of the air spaces so they deposit the silica in masses situated either in peripheral lymphoid areas or in the alveolar septa. The focal concentrations of silica stimulate a proliferation of connective tissue cells in their vicinity and a nodule slowly evolves. The size and character of these lesions depend upon the number and size of the silica particles that they contain. An excessive quantity of very small particles causes tissue necrosis surrounded by only a thin zone of fibrosis. Subsequently calcification and even ossification may replace the necrotic portions. Fewer and larger silica particles cause a less severe injury, which is countered by proliferative reaction. The resultant nodule is almost entirely composed of thick hyaline connective tissue fibers. If the inhaled dust in addition to silica, contains considerable of other substances like coal or iron, the structure of the nodule is further modified. The central zone may be specifically pigmented black or red and about it is a peripheral zone of heavily pigmented cellular connective tissue that sends prolongations into adjacent connective tissues. The section of the nodule is no longer circular but it has a stellate contour with a central core of dense fibrosis.

The reaction to focal collections of silica is progressive in the strict sense, but the amount of new reaction after discontinuing the dust exposure is limited and confined to the immediate surface of nodules already formed. Thus, nodules that might measure two mm in diameter after five years exposure to high concentrations of pure silica dust could enlarge to four mm after several years residence in a normal atmosphere, but very few new nodules would develop. A person whose lungs are involved with simple discrete nodulation is usually ignorant of his condition because there is still a large factor of safety in the remaining portions of the organs. Refined physiological technics may reveal impairment, but this is not sufficiently pronounced to interfere with the performance of habitual work.

In the group of miners already mentioned

roentgenographic manifestations of nodulation were first detectable after average exposures of 29 years in pure rock dust, but these same individuals had also averaged 229 years in ore dust. In advanced (third) stage nodulation the average exposure to rock dust was 59 years together with 287 years in ore. None of the men were working only in rock so that the rate of reaction to silica alone could not be determined.

3 *Massive conglomerate nodulation* is not so well-understood. It is manifested by extensive areas of fibrosis, often bilateral, that do not change materially over a period of years. Usually such lesions are superimposed upon a background of generalized nodulation but in some cases the isolated nodules are lacking or very few in number. Compensatory emphysema regularly complicates the picture. Conglomerate fibrosis seems to be particularly common among granite cutters and anthracite coal miners. Whether the non-silicious components of the dusts that these men inhale play a part in causing such reaction is not yet clear. It may occur in the silicosis of other industries.

It was formerly believed that conglomerate nodulation develops as a result of gradual increase in the number and size of the nodules so that they fuse together. This explanation is hardly adequate for a number of reasons. Dust inhaled into the normal lung is uniformly distributed and the nodules that form in response to it are neither larger, more numerous nor more rapid in evolution in one part of the organ than the other. Accidental confluence should theoretically be manifested everywhere but such is not the case. It occurs in isolated areas with no particular site of predilection. Therefore previous injury has been postulated to explain the excessive reaction that occurs in certain regions. Histological examination of tissues from terminal cases supports this hypothesis. The silicotic nodules are not merely crowded together so that the intervening air spaces are obliterated, they are still scattered but between them is a matrix of diffuse fibrous tissue that has replaced the normal pulmonary tissue. No evidence of active inflammation can be detected although here and there the arrangement of the fibrous tissue suggests that an organized pneumonia was responsible. If this is the explanation, one would expect to find a history of respiratory illness in some of these cases. Such is not generally the case and the hypothesis therefore becomes less tenable. But it still remains the most likely possibility. Subjective symptoms of pulmonary infections in the silicotic are generally trivial and even active tuberculosis can continue to progress for a long time before

its victim becomes aware of his condition. It therefore seems likely that milder infections would be entirely overlooked.

The frequency of slight pulmonary inflammations in the general population has only been appreciated since serial roentgenograms were commonly used in diagnosis. Even an insignificant patch of pneumonic reaction in a person exposed to high concentrations of silica dust should set up conditions that favor the local retention of inhaled particles. Silica, thus concentrated, will accentuate a pre-existing inflammatory process, prevent its resolution, and encourage organization. Such a sequence establishes a vicious circle for more dust will continue to be entrapped as the intensity of the inflammation increases. Final conclusions on the etiology of massive conglomerate fibrosis must await prolonged serial roentgenological study on a considerable group of persons and the evidence from more postmortem examinations.

For the present it suffices that this type of reaction be recognized as a manifestation of simple silicosis and that it be differentiated from a complicating, active infectious lesion. The diagnosis is not too difficult if conglomerate fibrosis is associated with generalized discrete nodulation, an effect probably produced by local injury developing subsequent to the formation of the nodules. But when extensive inflammation occurs before nodules have formed, most of the dust is apparently retained in such areas and little is deposited in other parts of the lung. Under such circumstances the only manifestation of silicosis may be massive areas of fibrosis with perhaps a few discrete nodules at their periphery. The diagnosis then becomes a problem that may require considerable study.

The clinical significance of conglomerate fibrosis is much greater than that of discrete nodulation. Either of itself or because of the associated emphysema it causes dyspnea and a definite limitation of working capacity. Cardiac hypertrophy complicating silicosis frequently occurs in cases with conglomerate fibrosis although a casual relationship between the two conditions has not yet been proved.

The manifestations of tuberculosis in silicosis may closely simulate those encountered in otherwise normal persons except for the fact that they occur upon a background of generalized nodulation. Such, for example, are the primary complex, the scars of healed apical tuberculosis, the bronchogenic aspirations, and miliary tuberculosis. Special types peculiar to silicosis are perimodular infection and silico-tuberculosis.

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In the group of miners already mentioned

roentgenographic manifestations of nodulation were first detectable after average exposures of 29 years in pure rock dust, but these same individuals had also averaged 22.9 years in ore dust. In advanced (third) stage nodulation the average exposure to rock dust was 59 years together with 287 years in ore. None of the men were working only in rock so that the rate of reaction to silica alone could not be determined.

3 *Massive conglomerate nodulation* is not so well-understood. It is manifested by extensive areas of fibrosis, often bilateral, that do not change materially over a period of years. Usually such lesions are superimposed upon a background of generalized nodulation but in some cases the isolated nodules are lacking or very few in number. Compensatory emphysema regularly complicates the picture. Conglomerate fibrosis seems to be particularly common among granite cutters and anthracite coal miners. Whether the non-silicious components of the dusts that these men inhale play a part in producing such reaction is not yet clear. It may occur in the silicosis of other industries.

It was formerly believed that conglomerate nodulation develops as a result of gradual increase in the number and size of the nodules so that they fuse together. This explanation is hardly adequate for a number of reasons. Dust inhaled into the normal lung is uniformly distributed and the nodules that form in response to it are neither larger, more numerous nor more rapid in evolution in one part of the organ than the other. Accidental confluence should theoretically be manifested everywhere but such is not the case. It occurs in isolated areas with no particular site of predilection. Therefore previous injury has been postulated to explain the excessive reaction that occurs in certain regions. Histological examination of tissues from terminal cases supports this hypothesis. The silicotic nodules are not merely crowded together so that the intervening air spaces are obliterated, they are still scattered but between them is a matrix of diffuse fibrous tissue that has replaced the normal pulmonary tissue. No evidence of active inflammation can be detected although here and there the arrangement of the fibrous tissue suggests that an organized pneumonia was responsible. If this is the explanation, one would expect to find a history of respiratory illness in some of these cases. Such is not generally the case and the hypothesis therefore becomes less tenable. But it still remains the most likely possibility. Subjective symptoms of pulmonary infections in the silicotic are generally trivial and even active tuberculosis can continue to progress for a long time before

its victim becomes aware of his condition. It therefore seems likely that milder infections would be entirely overlooked.

The frequency of slight pulmonary inflammations in the general population has only been appreciated since serial roentgenograms were commonly used in diagnosis. Even an insignificant patch of pneumonic reaction in a person exposed to high concentrations of silica dust should set up conditions that favor the local retention of inhaled particles. Silica, thus concentrated, will accentuate a pre-existing inflammatory process, prevent its resolution, and encourage organization. Such a sequence establishes a vicious circle for more dust will continue to be entrapped as the intensity of the inflammation increases. Final conclusions on the etiology of massive conglomerate fibrosis must await prolonged serial roentgenological study on a considerable group of persons and the evidence from more postmortem examinations.

For the present it suffices that this type of reaction be recognized as a manifestation of simple silicosis and that it be differentiated from a complicating, active infectious lesion. The diagnosis is not too difficult if conglomerate fibrosis is associated with generalized discrete nodulation, an effect probably produced by local injury developing subsequent to the formation of the nodules. But when extensive inflammation occurs before nodules have formed, most of the dust is apparently retained in such areas and little is deposited in other parts of the lung. Under such circumstances the only manifestation of silicosis may be massive areas of fibrosis with perhaps a few discrete nodules at their periphery. The diagnosis then becomes a problem that may require considerable study.

The clinical significance of conglomerate fibrosis is much greater than that of discrete nodulation. Either of itself or because of the associated emphysema it causes dyspnea and a definite limitation of working capacity. Cardiac hypertrophy complicating silicosis frequently occurs in cases with conglomerate fibrosis although a casual relationship between the two conditions has not yet been proved.

The manifestations of tuberculosis in silicosis may closely simulate those encountered in otherwise normal persons except for the fact that they occur upon a background of generalized nodulation. Such, for example, are the primary complex, the scars of healed apical tuberculosis, the bronchogenic aspirations, and miliary tuberculosis. Special types peculiar to silicosis are perinodular infection and silico-tuberculosis.

4 *The primary complex* of childhood infection is rarely influenced by the inhalation of silica as the lesions are usually healed and sterile by the time men are exposed to silica under modern industrial conditions. Experimentally, and very occasionally in human beings, such lesions can be reactivated and caused to spread by the silica that accumulates about them.

5 *Healed apical scars* of adult type reinfection tuberculosis may also be sterile at the time a man begins work in a silica hazard but the younger he is the more likely they are to harbor living organisms. Brown and Sampson¹ have demonstrated that in most persons such scars develop before the age of twenty-five. Presumably the same is true in silicotic subjects although this remains to be demonstrated. Such lesions, if they are potentially active, involve a certain amount of risk as inhaled silica may ultimately bring about reactivation and gradual spread of the infection. Usually it takes years for this to occur and the tuberculosis only becomes manifest in the later age periods (forty-five to fifty-four). The resultant disease is usually very chronic and the spread most often occurs by local extension. Since the subject is usually still at work silica dust tends to accumulate in the area of tuberculous inflammation. The combined action of tubercle bacilli and silica produce a chronic form of disease known as silico-tuberculosis.

6 *Silico-tuberculosis*. The cellular reaction is pre-eminently proliferative in character, a granulation tissue that is constantly becoming fibrous under the influence of the silica. Exudation is largely confined to the bronchi and little caseation develops. Cavities may ultimately form but when they do, they are usually terminal events, such reaction beginning in the top of the lung creeps slowly downward. It, like the conglomerate lesions of simple silicosis, causes dyspnea, but symptoms of intoxication and tubercle bacilli in the sputum often fail to appear for years. If such a lesion is situated in the apex of the lung its position is strongly suggestive of tuberculous origin. When a similar condition is found in other parts of the lung it will require study to differentiate it from *simple conglomerate fibrosis*. Unfortunately for the diagnostician, basal tuberculosis is much more common in the silicotic than in other subjects so that he is faced with this problem not infrequently. The behavior of the lesion in serial examinations, the clinical findings, and the sputum must all be carefully considered in arriving at a diagnosis. The origin of a basal silico-tuberculosis is not easy to determine particularly when it is observed for the first time in a well-advanced stage. Some of the cases

may have developed from reactivated primary foci of infection but in most instances one is forced to postulate an exogenous reinfection acquired during industrial life.

7 *Aspiration or bronchogenic tuberculosis* is relatively uncommon in the silicotic subject because cavities only form in the late stages of the disease. When it does occur the resultant reaction in new areas of the lung are more apt to be proliferative in type, although caseous bronchopneumomas are sometimes encountered.

8 *Miliary tuberculosis* is a terminal event that requires little comment. The writer has seen it most frequently in granite cutters for some unexplained reason.

9 The term *perinodular tuberculosis* has been included in the classification to describe an appearance seen in roentgenograms. The silicotic nodules appear to have fluffed out like kernels of corn that have popped. No case of this kind has come to autopsy before the infection has spread so far that this peculiar appearance was completely obscured. However, the effect can be reproduced in animals by intravenous injection of tubercle bacilli after the development of a generalized nodular silicosis. The organisms seem to localize in and upon the surface of the nodules followed by the development of a zone of tuberculous reaction about each lesion. Whether hematogenous infection is responsible for such reaction in human cases is not yet clear.

The lesions of asbestosis can not be included in a catalogue of the changes found in silicosis. Reaction to asbestos develops in a different manner. The dust particles being fibrous are not successfully removed from the air spaces by motile phagocytes. Instead they tend to remain where they originally lodge in the fine terminal bronchioles. In the walls of these structures they stimulate proliferation of connective tissue cells. As more dust is inhaled the fibrosis creeps toward the periphery. Ultimately the terminal air spaces are involved and large areas of the pulmonary parenchyma are obliterated by scar tissue. Fine emphysema is usually associated with the fibrosis. There are no nodules because the phagocytes do not concentrate the dust in focal areas. The lymphatic system does not participate in the reaction. Susceptibility to tuberculosis is probably somewhat increased but not to the same extent as in silicosis. Examination of large groups of asbestos workers in this country has failed to demonstrate an excessive incidence of

active infection Among fatal cases that were autopsied in England, Merewether² reports the incidence of tuberculosis as thirty-eight per cent, while in the silicotic group it was fifty-nine per cent. In experimental animals exposed to asbestos dust, infection with attenuated tubercle bacilli produces a temporary progression of the tuberculosis followed by healing with deforming fibrosis. In silicotic animals the same type of infection causes a chronic silico-tuberculosis that eventually terminates in death. Apparently infection in the case of asbestosis is important because it accentuates the fibrosis initiated by the inhaled dust.

The present experience with cases of silicosis has permitted certain generalizations to guide the physician in his treatment. These concepts may have to be modified later but they represent the consensus of informed opinion in this country today.

Summary

1 Accentuation of the linear markings in a pulmonary roentgenogram does not constitute a basis for a diagnosis of silicosis. The change is non-specific and even in persons with a history of prolonged exposure to silica, it may be due to other causes.

2 Simple silicosis is manifested by nodulation uniformly distributed throughout both lungs. This condition does not incapacitate for work, it does not produce symptoms. It is progressive to only a limited degree. A person with this type of reaction may continue in his regular employment although recognition of his condition presupposes that every effort will be made to reduce the dust in which he works to a minimum concentration. He should be subjected to roentgenographic examination once a year to be certain that no infection is developing in his lungs.

3 Simple silicosis may also be manifested by massive areas of conglomerate fibrosis usually associated with generalized discrete nodulation. Such cases usually have dyspnea and are definitely limited in their capacity to work. They should be given lighter jobs commensurate with their abilities. To discharge them will only make a hypochondriac and a possible litigant.

4 Uncomplicated silicosis is not fatal. The predisposition to infection, in most instances tuberculosis, constitutes the grave danger from this condition.

No person with open tuberculosis should be permitted to work in an industry where silica dust is created. An old employee with closed silico-tuberculosis that does not incapacitate him may be allowed to do light work in departments where no dust is generated. Sanatorium treatment may be tried but it is often ineffective. A young employee with silico-tuberculosis should be given the benefit of sanatorium treatment.

5 Persons over forty with roentgenographic evidence of well-healed adult type tuberculosis can be safely employed in an industry with a silica hazard. Their only danger lies in the development of a massive conglomerate type of fibrosis. But it is assumed that an industry that is having preemployment examinations is cognizant of the hazard and is making every effort to reduce the dust concentrations in its plants.

6 The younger the individual with x-ray evidence of healed adult type tuberculosis, the less safely can he be exposed to silica dust.

7 Roentgenographic evidence of a healed primary complex in a person over sixteen years of age does not constitute grounds for disbaring him from exposure to silica.

The silicosis problem can be solved by preemployment examinations of all applicants for work to select those who may safely expose themselves to silica dust, by periodic examinations of persons already employed to detect the development of infection that is amenable to treatment in its early stages, and by engineering methods to prevent or at least reduce the formation of dust.

8 Such a program involves intelligent cooperation between employer and employee with full knowledge of both parties of the dangers and the methods for the elimination. The responsibilities of the industrial physician are obvious. He must be competent in diagnosis and must zealously guard the interests of both employer and employee.

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DIFFERENTIAL DIAGNOSIS OF SILICOSIS FROM OTHER PULMONARY DISEASES

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The differential diagnosis of silicosis from other pulmonary diseases is not as simple as one is led to believe. This is perhaps most easily demonstrated by discussing a group of patients indexed as having silicosis with pulmonary tuberculosis. At the Metropolitan Hospital, since 1928, 110 cases were catalogued as having both silicosis and pulmonary tuberculosis. On closer analysis, however, fifty-one cases had to be discarded as having no silicosis. Of the remaining fifty-nine cases, 45 were admitted to the hospital with an admission diagnosis, not of silicosis or silico-tuberculosis, but of straight pulmonary tuberculosis. Of these fifty-nine, extensive hospital study showed that thirteen had no clinical tuberculosis at all, but far-advanced silicosis. When one stops to consider that these cases had filtered through the hands of experienced diagnosticians, the inconsistencies become even more amazing. This naturally leads to the question of reliability of vital statistics in general, as far as silicosis is concerned, especially where the final diagnosis is made by the local practitioner, away from the hospital service. This will be further discussed elsewhere.

It is interesting to note how infrequently the patients were aware of their occupational hazard, or their silicotic disease. It was the x-ray appearance in many instances which stimulated the resident and attending staff to be on the alert for pneumonokoniosis. There is a current tendency to look upon all bronchogenic dissemination of tuberculous pathology, especially where the size of the nodules is small, as potential cases of silicosis. This is especially true with x-ray staffs. Without history, in view of a diffuse mottling, a report may state—"pulmonary tuberculosis with silicosis." On investigation of the history of the patient, there is no statement of exposure to silica dust. On discharge or death of the patient, an ambitious clerk carefully indexing the various diagnoses, immedi-

ately adds the roentgenologist's impression of silicosis.

In a similar manner, physicians, without considering the industrial history of the patient, and being influenced by the roentgenogram, dictate into the follow-up record the diagnosis of silicosis.

With such errors made both by the x-ray department and the visiting staff, fifty-one out of 110 cases reported as having silicosis had to be discarded.

The diagnosis of silicosis should not be made unless there is a definite history of exposure to silica dust. It would be ideal to know the concentration of free silica, the duration of the exposure, the dust count, and size of the particles. Unfortunately, such data is most difficult to obtain even in this local area. We are to be guided by the fact that in dust containing twenty per cent free silica, the dust count being above 200,000,000 particles per cubic foot, and the particles chiefly under five microns in diameter, it would take an average of four to five years for the development of pulmonary silicosis. When the concentration of free silica in the dust increases, the time duration correspondingly is shortened. Cognizant of the above, we know that an individual shoveling soft coal can not develop pulmonary silicosis. Yet how frequently is such a diagnosis made. One should stress that where the jack hammer is used, there is the greatest concentration of dust.

Without a definite history of sufficient exposure both in regard to concentration and duration of exposure, one must be hesitant in making a diagnosis of silicosis. Recently I reviewed an interesting legal case. An overseer of a group of street excavators made claim for compensation because of a pulmonary tuberculosis complicating silicosis. There was no question in regard to the diagnosis of pulmonary tuberculosis. The difficulty arose with the diagnosis of the silicosis. There was bilateral upper lobe cavitation with a bronchogenic seeding down both lungs. The diffuse bilateral bronchogenic tuber-

culosis was interpreted by a group of physicians as silicosis. Of course, with a history of short duration of exposure, and very little chance for concentration as would occur in the open streets of New York City, the diagnosis of silicosis should have been discarded. Furthermore, in reviewing the serial x-rays, it was noted that the maximum intensity of the bronchogenic seeding was in the first x-rays taken. From then on, the serial x-rays revealed a slow resolution of the diseased areas. Resolution does not occur in silicotic nodules. The nodule in silicosis either remains stationary or progresses.

Another patient at the Sea View Hospital had a vague industrial history, and still a diagnosis of pneumonosis with pulmonary tuberculosis was made. A white male, age fifty-eight, stated that he had worked almost all his life chipping paint in the shipyards. He used an automatic chipping machine. He stated that there was considerable silica used in ship paint. The visiting physician also calculated that there should have been considerable iron dust. To the x-ray slip, a note of an industrial history had been added, and the following x-ray report was returned:

Diffuse acinous and nodular exudative and productive disease, irregularly distributed throughout the upper two-thirds of both lungs. The disease has a tendency to become confluent in areas. There is slight excavation in the left infraclavicular region.

The x-ray diagnosis was pulmonary tuberculosis superimposed on silicosis.

Were it not for an autopsy there would have been another case on record of silicotuberculosis. The disease was a progressive pulmonary tuberculosis which caused death in two months. There was no macroscopic or microscopic evidence of silicosis. Apparently, if silica is used in ship paint, there is not sufficient concentration to cause silicosis.

On the other hand, the history may be misleading. One is hesitant to suspect silicosis in the owner of a grocery store. An adult white male fifty-five years of age had a diffuse pulmonary fibrosis. The first diagnosis was a cirrhotic form of pulmonary tuberculosis, but in view of repeatedly negative sputa for tubercle

bacilli, in the presence of copious expectoration, the diagnosis of tuberculosis had to be discarded. Pulmonary syphilis was also given consideration. At first, he remembered no exposure to silica dust. He had never used a jack hammer or was employed in mining. Fortunately, he was asked if he had ever polished metal, and he then revealed a history of years of use of clay in the making of spark plugs which he then had to polish by grinding.

Wherever there is evidence of pulmonary fibrosis, one must write a detailed history of previous occupation.

Now, since silicosis has become compensable in New York State, employers, to rule out silicosis, have had all employees x-rayed. An adult male a clerk in charge of the payroll of a gang of rock-drillers, was also x-rayed. He never had been exposed to silica dust. An x-ray of his chest was interpreted as advanced silicosis, and he was told to look for another position. He did have spasms of coughing and expectoration, and became alarmed because of the diagnosis of silicosis. On examination it was found that he had fibrosis in both lower lungs secondary to nasal instillation of as much as an ounce of paraffin oil a day. His employer was contacted, and his position was restored to him.

Where there is sufficient occupational history, the x-ray becomes the most important examination for the diagnosis of pulmonary silicosis. Perhaps this must also be stated with reservations, for in the early stages of silicosis, the root and bronchial accentuation can be easily simulated by either bacterial infections or by other irritants. Just as in the last case paraffin irritation of the bronchi may also be a coincidental happening in a worker exposed to silica dust. In fact, because of nasal irritation, he may be more addicted to the use of nasal oils. In a similar manner, he may have either a sinus infection or a chronic nasopharyngitis with an infection of the lower bronchial tree, which could easily simulate the early stage of silicosis.

The first stage, as pointed out in the classification of Lanza and Childs in 1917,¹ has a bilateral increased density of root and bronchial markings. Small nodulation at the hilar areas or along the bronchi may be present. There is no dis-

tortion of the thoracic contents, and the diaphragms move freely

In the second stage, there is besides the above a symmetrical dissemination of small circumscribed dense areas. The distribution is usually in the lower part of the upper third of the lung, at about the level of the upper hilar region. In a later stage, the areas may increase in size. The domes of the diaphragms appear more accentuated.

The third stage is a further progression from the second stage. There is massing of the dense areas. Tracheal and mediastinal changes may occur, and in advanced progression tenting, displacement, and limited motion of the diaphragms may also occur.

If silicosis were only limited to the above stages, there would hardly be a discussion of differential diagnosis. There is, unfortunately, a more advanced stage of silicosis, and one in which there is great difficulty in ruling out tuberculosis. The confusion comes from the dense areas to which various investigators have used the term "infective silicosis." How confusing these shadows are, can only be illustrated by the fact that in most of the fifty-nine cases collected at the Metropolitan Hospital, a diagnosis of pulmonary tuberculosis was made, and the patients transferred without a suspicion of an occupational disease.

More interesting is the fact that in this group of fifty-nine patients thirteen were diagnosed as far-advanced pulmonary tuberculosis with sputa negative for tubercle bacilli. It is this type of case that causes so much confusion in regard to the association of tuberculosis and silicosis, and is usually labelled silico-tuberculosis. This group can not be classified as clinical tuberculosis, with sputum negative for tubercle bacilli, no more than we could label other patients with fibrotic tissue in the lung and with negative sputa as tuberculous. We have had autopsy material of this type of case at Sea View Hospital, where only silicosis was found, and there was no evidence of pulmonary tuberculosis. If the pathologist had found a number of small areas of healed tuberculosis in the silicotic infected area, would the finding of these areas warrant the addition of tuberculosis as a contributory cause of death? We can

now understand the confusion that has occurred in the listing of workers as silico-tuberculosis. It is my opinion that no clinical diagnosis of pulmonary tuberculosis should be made where there is copious expectoration and tubercle bacilli are absent. The literature abounds in the legend that bacilli are difficult to demonstrate even in advanced silico-tuberculosis. McFarland² explains the infrequency of cross-infection in the families of the granite workers on the basis of the infrequency of finding tubercle bacilli in the silico-tuberculous cases. Can we accept such explanations? In my opinion the absence of tubercle bacilli is more fact than legend. These workers have silicosis but no active pulmonary tuberculosis.

When thirteen of fifty-nine cases or twenty-two per cent can be incorrectly diagnosed by men trained in pulmonary disease as advanced pulmonary tuberculosis without suspecting an occupational disease, we can understand why, in areas of silica dust exposure, every death caused by silicosis is attributed to tuberculosis. How infrequently in these areas do we find a death certificate attributed to simple silicosis? Unfortunately, most studies of the relationship of tuberculosis to silicosis are based on studies of vital statistics. Such vital statistics are of little value. Jarvis,³ in a study of vital statistics in Washington County, Vt. over a period of twenty years up to 1921, states that there were eighty-five per cent tuberculous deaths among silicotic patients. McFarland² quotes Hoffman's figures of 1095.5 deaths per 100,000 in silicosis, compared with 94.6 per 100,000 in other males above the age of twenty. Should these reports form the basis of our knowledge of the association of tuberculosis and silicosis? Even Hoffman's figures, which suggest a very high death rate per 100,000, demonstrate that probably all cases of silicosis do not die of tuberculosis, as has been so frequently quoted. If almost all cases of silicosis die of tuberculosis, should the death rate be as low as 1095.5 per 100,000? Although Hoffman's figures could not be a true picture of the tuberculosis death rate in silicosis, it would be interesting to find the prevalence of tuberculosis in the 100,000 cases of silicosis he reported.

This can be done by the use of the formula as described by Mr Drolet⁴ in his section of Epidemiology in Goldberg's system of tuberculosis. By multiplying the rate per 100,000 by five, the incidence of clinical tuberculosis is obtained. In other words, for every tuberculous death there are five living cases of clinical tuberculosis. Hoffman's 1095.5 per 100,000 would be 54 per cent. It has also been pointed out that where the death rate in tuberculosis is increased, as in the negro, because of the acuteness of the disease and the frequency of occurrence, there may be only three living tuberculous patients per death. Therefore, it would be more logical to multiply the 1095.5 per 100,000 by the figure three. The prevalence then would be 3.2 per cent. It has been previously mentioned that Hoffman's death rate is probably too high.

We have few statistics of tuberculosis among workers exposed to silica dust. In most of the instances, there are too few details mentioned of the mode of examination and too much of the term "silico-tuberculosis" used for diagnosis. There are two groups in this country in which the work was carefully done. Smith and Fennel,⁵ in a study of silicosis among rock-drillers, blasters, and excavators in New York City, examined, x-rayed, tested the sputum, and even tuberculin-tested the workers. They reported six cases of active pulmonary tuberculosis in 208 workers. Two of the six cases had no silicosis. Therefore, there were four out of 204 men with active pulmonary tuberculosis, or 1.9 per cent. These figures are very close, but less than the incidence of tuberculosis in food-handlers as recently reported by Martin, Pessar, and Goldberg.⁶ This group reported a similarly well-managed examination of two thousand apparently healthy food-handlers. The group was composed of both men and women. In the first one thousand examined, the men formed the majority of the workers, and thirty-six, or 3.6 per cent, of active pulmonary tuberculosis was discovered. They also reported that if the incidence were expressed by parenchymal pathology as found by x-ray, of the first thousand, twelve per cent had tuberculosis, and of the second thousand, eleven and eight tenths per cent. In the second thousand cases there were

only ten active cases of pulmonary tuberculosis, reducing the percentage from 3.6 per cent to 2.3 per cent.

In an examination of 7722 miners in the lead and zinc mines of the Pitcher field of the Tri-State district (Oklahoma, Kansas, and Missouri), Meriwether, Sayers, and Lanza⁷ report 3.4 per cent of silico-tuberculosis in 1928 and 2.6 per cent in 1929. They also report finding 1.34 per cent of pulmonary tuberculosis without silicosis in 1928 and a reduction to 0.89 per cent in 1930. It is difficult to correlate the incidence of tuberculosis in the silica dust occupations with the statements that most silicotics die of pulmonary tuberculosis.

The same is true with the current belief that silicosis predisposes to tuberculosis. When does the susceptibility to tuberculous infection begin to manifest itself? Is it logical to believe that silicosis predisposes to tuberculosis when there is the frequent history of twenty to thirty years exposure to silica dust before the sudden development of an acute caseous pneumonic tuberculosis? Why had not the tuberculosis developed in the first years of silicosis? Although it is difficult to turn away from the present concepts of tuberculosis and silicosis, the question merits considerable thought.

Conclusion

1 A diagnosis of silicosis must be based, first, upon a history of sufficient exposure to silica dust.

2 The simple and uncomplicated forms of silicosis are easily diagnosed by x-ray examination.

3 The far-advanced and complicated forms of infective silicosis are difficult to differentiate from pulmonary tuberculosis by x-ray.

4 In far-advanced silicosis the continued absence of tubercle bacilli in the sputum is a sufficient factor to rule out the diagnosis of clinical pulmonary tuberculosis.

5 The accepted fact that most patients with silicosis die with pulmonary tuberculosis is grossly exaggerated. It is difficult to correlate the rather low incidence of tuberculosis in silica dust occupations (1.8 per cent to 5 per cent) with the statements that most silicotics die of pulmonary tuberculosis.

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CLINICAL FEATURES AND INDUSTRIAL SIGNIFICANCE OF SILICOSIS

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The following definition of silicosis was promulgated by a Committee of the American Public Health Association in 1932

Silicosis is a disease due to breathing air containing silica (SiO_2), characterized anatomically by generalized fibrotic changes and the development of milary nodulation in both lungs, and clinically by shortness of breath, decreased chest expansion, lessened capacity for work, absence of fever, increased susceptibility to tuberculosis (some or all of which symptoms may be present), and by characteristic x-ray findings¹

While not entirely satisfactory, this definition has been generally accepted in this country although it is probable that it will be revised in the near future. It should be understood that the definition applies to dust containing free silica, that is, silica which is not in chemical combination with other substances. As far as we know now, dusts containing silicates, with one exception—*asbestos*—do not cause a disabling pneumoconiosis.

It should also be understood that the effect of the inhaled silica dust upon the lungs is, so to speak, a mass action and quite different from an infection. The pathological effects of the inhalation of silica dust are apparent from the earliest inception of the disease throughout all of both lungs. Although x-ray films may on account of the anatomic structure of the body, show the characteristic nodulation as more apparent in one part of the lung than in another, postmortem examinations of even the earliest cases reveal that the distinctive process is evenly distributed throughout the lungs. One does not look, therefore, for a localized area of silicosis in one lung as would be done in the case of an infectious process.

Silicosis is a truly occupational disease and does not occur except as an occupational disease. It is found among the following classes of industrial workers

1 Those who mine in hard (silicious) rock—gold, silver, copper, lead, zinc, iron, particularly those workers who are engaged in drilling, shoveling, blasting—underground—and crushing rock and ore above ground.

2 Those whose occupation is of the nature of mining—workers in tunnels, foundations, and quarries, where the work is carried on in silicious rock. The essential process is similar to mining, that is, holes are drilled in rock with pneumatic drills, the holes are then loaded with dynamite and blasted, and the resulting broken rock and debris are shoveled away.

3 Those whose work consists of cutting and dressing highly silicious stone, for instance, granite monument works.

4 Those who work in industries where there may be processes which involve exposure to silica dust. Such processes are very numerous indeed and are to be found in glass works, pottery works, foundries, refractory works, abrasive works, and in grinding and sandblasting.

It is not possible to make more than a rough estimate of the number of industrial workers in this country who are exposed to the silica dust hazard, but it is probable that this number is at least 500,000.²

Our knowledge of silicosis is largely derived from the results of surveys and investigations undertaken in the industries where the hazard is to be found, notably the hard rock mining industry. The clinical picture, when so studied, varies according to the severity of the hazard, hence, the clinical picture in one location will differ from that in another location but will, in each case, be fairly constant. The severity of the hazard depends upon the degree of dosage of silica, and to appreciate this, one must know the

amount of silica in the rock or other substance with which the individual works. This may be quartz containing practically one hundred per cent free silica, or granite containing fifty to sixty per cent free silica, or some mixture of sand or other abrasive substance which may contain only twenty to thirty per cent free silica. The next essential point in estimating the severity of the hazard is the determination of the amount of dust present. In this country, dust samples are collected by the standard technic elaborated by the United States Public Health Service and the United States Bureau of Mines. The result is expressed in millions of particles under ten microns in size per cubic foot.

The silicious dust in any given instance, therefore, may be present in terms of hundreds of millions of particles per cubic foot or in very much smaller amounts. This, of course, has a practical bearing upon the dosage. We must consider also that the patient's exposure may be constant or intermittent—intermittent either on account of the nature of the work itself or because the workman is accustomed to seek employment in the harvest fields or other outdoor work at certain seasons of the year.

The importance, therefore, of a very careful occupational history of any patient in whom silicosis may be suspected or diagnosed is at once apparent. Remembering that silicosis takes years to develop, it must be appreciated that perhaps neither the present occupation nor the immediately previous occupation of a patient may be responsible for his condition. When a silicosis survey is carried on and the individuals examined are men still working at their daily job or perhaps recently disabled, the occupational factors can usually be determined fairly accurately. But when the individual patient is picked up in the ward of a general hospital, it is by no means so easy to determine whether his condition originates from his employment. Such a patient may be quite ignorant of any health hazard to which he may have been exposed. Even though the physician can ascertain that he was at some time exposed to silica dust, the extent of the hazard may be largely a matter of guess work. If such a ward patient has silicosis, his disability may be due to a complication of

diseases not directly referable to his occupation, rather than to silicosis.

Where the silica hazard is very severe, as was formerly seen when pneumatic drilling was carried on in a highly silicious rock without the use of water or other means to entrap or allay the dust, disability more or less complete may develop from the resulting fibrosis of the lungs without a complicating infection. Such extreme hazards are uncommon and are tending to disappear.

Generally speaking, the type of silicosis seen in American industries today does not, as a rule, cause disability unless the factor of infection is present. We still do not know why the silicotic individual tends to become tuberculous but that he does so is attested by the overwhelming evidence of every country or locality where this disease has been studied. Infection may manifest itself by the typical symptoms of night sweats, loss of weight, profuse sputum, and moist rales. On the other hand, infection may not be made evident, clinically, until it is very far advanced.

Where the silica hazard has been very severe, when tuberculosis infection occurs, the patient is apt to go down hill very rapidly. Otherwise, the silico-tuberculosis tends to pursue a chronic and slowly disabling course.

One of the dilemmas that confronts the physician is the advice that he should give his silicotic patient about continuance at his work. The situation here is complicated by various economic considerations and it is not practicable to be too dogmatic in laying down rules and regulations. If the silicotic patient has active tuberculosis, he should, of course, be advised to quit work both for his own sake as well as that of his fellow employees. If he has a definite silicosis and it is not possible in his present occupation to avoid further exposure to the hazard, evidently his best chance of holding his disease in check is to seek other employment. If, on the other hand, having been detected by the employer and adequate provisions made to control the hazard, the patient might as well continue in the work for which he is fitted and trained as to seek other employment, particularly if he is along in years. This whole matter of working or quitting work is far from a

simple one and calls for very careful and conscientious thought on the part of the physician who is called upon to render a verdict

Needless to say, the x-ray film is the principal reliance in diagnosis, and stereoscopic films are essential, especially in the early cases. Without the characteristic appearance of nodulation, the diagnosis cannot be made. A careful occupational history will often save the diagnostician from embarrassment. Those interested might well consult the Committee Report entitled "Roentgenological Appearances in Silicosis and the Underlying Pathologi-

cal Lesions," which was published in the *United States Public Health Reports* for August 2, 1935

There is a growing amount of evidence to show that when negroes are exposed to severe silica hazards, they may succumb quite rapidly. An overwhelming tuberculous infection may be set up even before the characteristic fibrosis due to the inhalation of silica is well-established

1 MADISON AVE.

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BLOOD DONORS TRANSMIT MALARIA

Two interesting cases of malaria that were transmitted by blood transfusions thirty-three years after the donor of the blood had recovered from the disease are reported in *The Quarterly Bulletin* of the New York City Department of Health. The first case was that of a child who received a transfusion of blood donated by its father. Twenty-nine days later the child developed malaria. Questioning of the father revealed that he had been ill of malaria in Greece thirty-three years ago but had been free of symptoms since that time. The second case was that of a woman who, after an operation, received a transfusion of blood from her husband. She developed malaria eleven days later and questioning revealed that her husband had had the disease in Palestine thirty-three years ago and had since been symptom free. In both cases examinations of the blood of the father and husband were made and in each case no trace could be found of the presence of malaria parasites.

* The germ that causes malaria is usually transmitted by the anopheles mosquito. The mosquito, which seems to suffer no ill effects from the presence of the germ in its body, becomes infected with it when he draws blood from the body of a person who has the disease. When a mosquito bites a person the first operation is to inject an acid fluid which thins the victim's blood at the point of attack and make it easier for the mosquito to draw out the blood. It is in this course of this injection that the mosquito carrying the germ passes it to the new host and thus spreads the disease.

The occurrence of these two cases in which the presence of the malaria germ in the transmitting blood could not be demonstrated seems to indicate that there was present in the blood some other factor than the germ, which factor has the ability to produce the disease in a body not supplied with the immunity factor that it creates and which, it appears, is not transmitted with the disease-producing factor.

WASSERMANN TEST CUTS MARRIAGES

Since Connecticut's law requiring blood tests before marriage went into effect last January, weddings in the state have dropped to approximately half the number that there were before, reports the *New England Journal of Medicine*.

The State Department of Health figures show that during the first five months of the year, from January through May, 1813 marriages were performed in Connecticut. In the same five months of 1935 there were 3,468 couples wed. This is a drop of more than 47 per cent.

The marriage law requires both the man and woman applying for a marriage license to present a doctor's certificate showing that

the applicant has submitted to a blood test for syphilis and that the reaction has been negative. The specimens of blood may be examined in any laboratory approved for that type of work by the Health Department, and only a part of the specimens go to the department's own laboratory in Hartford.

The sharpest decline in marriages has been in the border towns, indicating that fewer people are coming into Connecticut from other states to marry. The Health Department has no figures yet to indicate how many Connecticut people are going outside the state to marry this year. Information from other states will be secured after the law has been in effect longer.

A STUDY OF THE BALL TECHNIC OF ROENTGEN PELVICEPHALOGRAPHY

FERDINAND J. SCHOENECK, M D, LEE HADLEY, M D, and
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Considerable interest has been evinced during the past decade on the subject of x-ray pelvimetry. Last year, Ball and Marchbanks^{1,2} of Chattanooga, Tenn. developed a technic which depends essentially on a volumetric comparison of the fetal head and the pelvis thru which it must pass.

Two x-ray plates—an anteroposterior and a lateral—are taken at a specified distance. The circumference of the head is measured on each plate. The volume is estimated from the circumference. The mean of these two measurements, expressed in milliliters or cubic centimeters, represents the volume of the fetal head.

The shortest anteroposterior diameter of the inlet—conjugate vera—is computed from the lateral plate. Using this measurement as the diameter of a sphere, the volume of such a sphere is determined. This procedure is repeated, using the narrowest transverse measurement of the mid-pelvis—the bisischial—on the anteroposterior plate. The smaller of these volumes is used for comparison with the volume of the head.

If the volume of the fetal skull is greater than the smaller of the estimated pelvic volumes, the result is expressed in terms of + milliliters or cubic centimeters, if the fetal skull volume is smaller, the reading is given as—milliliters or cubic centimeters.

The curvature of the sacrum and width of the sacrosciatic notch should receive careful attention in evaluating the size of the pelvis at the level of the ischial spines. Caldwell³ has emphasized the importance of these observations in interpreting the capacity of the posterior portion of the pelvis.

No direct information as to the pelvic outlet is available by this method of pelvimetry.

One might naturally deduce that if the volume of the head is greater than that

of the pelvis, there will be difficulty in delivery. However, other factors enter into such deductions. Nature is able to take care of most minor disproportions by means of the well-known mechanism of labor in association with molding of the head. We may not, therefore, conclude that all + readings by Ball's method will give rise to dystocia.

In regard to interpretation of findings, we shall quote from a personal communication from Dr. Ball.

In manuscripts which are to be published, I have emphasized that disproportion of 150 ml (+150) with the true conjugate diameter, is a true disproportion. However, a disproportion of 250 ml with the bisischial spine diameter may not be of consequence, provided there is a wide sacrosciatic notch and well-curved sacrum. In the narrow notch with straight sacrum and small posterior pelvic capacity, rotation may be impossible, and in this type of pelvis the bisischial spine diameter should not show a disproportion greater than that tolerated by the fetal head through molding. This maximum toleration is about 150 ml.

We are presenting a study of fifty cases, x-rayed according to the Ball technic. Most of these women were x-rayed early in labor. The plates, however, were not interpreted until after delivery, consequently the conduct of these cases was not influenced by the roentgenological findings.

TABLE I—OPERATIVE INCIDENCE

+ Cases	(18)	36%
— Cases	(32)	64%
Entire Group	(18 of 50)	36%
— Cases	(6 of 32)	18%
+ Cases	(12 of 18)	66%
Over +50	(6 of 7)	85%
Over +150	(3 of 3)	100%

Table I represents the operative incidence of the group. Thirty-six per cent of this series fell in the + group, i.e., the head was larger than the pelvis. This figure is probably not a true index of the general per cent of plus cases, since, in the latter part of the study, we x-rayed only those women who had some clinical evidence of disproportion. This fact accounts

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also, for the high percentage of operative deliveries in the entire group, i.e., thirty-six per cent. We have included as normal, spontaneous deliveries and true prophylactic forceps. All other deliveries were considered as operative.

The difference in operative incidence between the minus and the plus group is quite marked. As a matter of interest, we have compiled the incidence of cases above +50 and above +150.

Table II represents the average length of labor in the plus and minus groups. While we recognize that many other factors—presentation, position, and condition of the soft parts—influence the length of

TABLE II—AVERAGE LENGTH OF LABOR (EXCLUDING CESAREANS)

Primiparae	+Cases (10)	28 Hrs.
	—Cases (13)	14 Hrs.
Multiparae	+Cases (5)	33 Hrs.
	—Cases (13)	7 Hrs.

TABLE III—OPERATIVE DELIVERIES (MINUS CASES)

Case No	Ml	Grav	Labor	Deliveries
45	—11	1	14hrs	Cesarean— Persistent urachus?
34	—42	1	36hrs	High forceps— Cervical dystocia
28	—55	2		Cesarean— Preeclampsia
19	—97	1		Cesarean— Cardiac
24	—134	1	4hrs	Cesarean— Inclined pelvis
48	—219	1	14hrs	Mid forceps—Fetal Distress—Death

TABLE IV—NORMAL DELIVERIES +CASES

Case No	Grav	Labor	Inlet Ml	Spines Ml	Deliveries
14	1	18hrs	+2	—182	Prophylactic forceps
5	1	14hrs.	—231	+16	Prophylactic forceps
31	1	22hrs	—367	+24	Spontaneous— Excessive molding
21	1	23hrs	—272	+25	Spontaneous
11	5	15hrs	—145	+27	Spontaneous— High assimilation pelvis
1	4	31hrs	+53	+23	Spontaneous

TABLE V—OPERATIVE DELIVERIES (+ CASES)

Case No	Grav	Labor	Inlet Ml	Spines Ml	Delivery
6	1	27hrs.	—83	+4	Head asynclitic mid forceps extraction.
17	1		+4	—49	Head extended—Elective Cesarean section
50	1	16hrs	+7	—178	Flat rachitic pelvis Low forceps extraction
42	1	16hrs	—1	+16	Low forceps extraction.
23	1	50hrs.	—360	+21	Cervical dystocia. High forceps extraction
3	2	42hrs.	+45	—371	Excessive molding Forceps extraction
35	1	41hrs.	+37	+51	Part. ruptured uterus. Cesarean section
15	1	62hrs	—276	+61	Axis traction forceps Fetal death
2	7	36hrs	—71	+70	Forceps extraction
43	1	15hrs.	+232		Male pelvis. Cesarean section.
45	1	28hrs	—96	+258	Small post. pelvis. Cesarean section
47	12	42hrs.		+295	Large post. pelvis Version and extraction.

labor, the contrast does seem to be of some significance.

Table III is an analysis of the operative cases in the minus group. Bony disproportion may be definitely ruled out in Cases 28, 19, and 48. In case 45, laparotrachelotomy revealed an apparent anomaly of the bladder, which may have interfered with descent. Clinically, case 34 was a true cervical dystocia. Case 24 is illustrated in Fig 1. While there is no disproportion, it will be seen that the pelvic inlet is practically on the same plane as the vertebral column. In attempting engagement by fundal pressure, it can be seen that the head is forced against the pubis, rather than being directed into the pelvic cavity.

Table IV represents the + cases that delivered normally. The readings at the inlet and mid-pelvis are given. It will be noted that Case 1, a Grav IV, was the only case with a disproportion greater than fifty ml that delivered spontaneously.

Table V represents the + cases that were terminated by operative deliveries.

CASE 6. The mid-forceps extraction in this instance was probably due to the faulty attitude of the head rather than any true disproportion.

CASE 17 (Fig 2). This patient had a clinically diagnosed contracted pelvis with a true conjugate of 10 cm. Engagement of the head was attempted with the patient anesthetized. The head could not be engaged and a cesarean section was elected. Study of the x-ray plates failed to reveal a true disproportion and it would seem that the extended attitude of the fetal head accounts for the unengagability.

CASE 50 (Fig 3, 4). This patient had a flat rachitic pelvis—true conjugate 8.75 cm. transverse of the outlet 9.5 cm., posterior sagittal 6.5 cm. Membranes were ruptured after seven hours of labor—the head was unengaged and unengagable. Two hours later conditions were unchanged and it was decided to deliver by laparotracheotomy. At this time the x-ray plates were studied. According to the Ball technic, no true disproportion existed, however, the abnormal curvature of the sacrum produced fear that there might be difficulty at the outlet (clinical mensuration showed an index of the outlet of sixteen, which is adequate).



Fig 1 Abnormal inclination of pelvis (Case 24)

This patient was examined, just before she was to be placed on the operating table, and the head was found to be definitely engaged. She was delivered by a simple low forceps extraction five hours later.

CASE 42 There was no true disproportion at the spines or inlet. The outlet was definitely contracted.

CASE 23 Preeclamptic toxemia. Labor was induced by means of bag insertion. The child was delivered by manual rotation and high forceps extraction when the cervix was five fingers dilated. No true disproportion was present.

CASE 3 The minor disproportion at the inlet



Fig 2 Fetal head in extension attitude (Case 17)

was apparently compensated for by molding of the fetal skull.

CASE 35 This was a clinically diagnosed border line pelvis. The head was asynclitic. After a forty-one hour test of labor, a laparotomectomy was done. When the abdomen was opened, free blood was found and examination of the uterus showed a beginning rupture. The patient made an uneventful convalescence.

CASE 15 This was a laterally contracted pelvis. Clinically the outlet was also contracted. Position R.O.P. with failure to rotate. The child was rotated manually and delivered by axis-traction. Delivery was very difficult. The child died as the result of a cerebral hemorrhage.



Fig 3 Flat, rachitic pelvis, anteroposterior view (Case 50)



Fig 4 Flat, rachitic pelvis, lateral view (Case 50)

CASE 2 Rhachitic pelvis All previous deliveries had been instrumental The outlet was adequate. Delivery was successfully accomplished with forceps

CASE 43 Male type pelvis Contraction at the inlet. Patient was sectioned after sixteen hours of labor X-ray study revealed a true disproportion at the inlet.

CASES 45 and 47 These cases illustrate two laterally contracted pelvises (Fig 5, 6) Case 45 was delivered by cesarean after a twenty-eight hour test of labor Case 47 was successfully delivered by version and breech extraction Examination of the x-ray plates shows a marked difference in the posterior portion of the pelvis Case 47 shows a well-curved sacrum with a wide sacrosciatic notch, whereas in case 45, the sacrum has an abnormal curvature and the sacrosciatic notch is more acute.

one instance of true disproportion at the inlet—this case was sectioned Two cases showed a disproportion of over +250 at mid-pelvis In one instance the posterior portion of the pelvis was not adequate and the patient was delivered by cesarean, in the other case, a gravida 12, the posterior portion of the pelvis was adequate and this child was delivered by version and extraction

Two cases were delivered by cesarean section because of clinically diagnosed bony disproportions X-ray studies revealed no true disproportion In one instance there was an abnormally inclined



Fig 5 Laterally contracted pelvis—at level of ischial spines Abnormal curvature of sacrum Narrow sacrosciatic notch (Case 45)



Fig 6 Laterally contracted pelvis—at level of ischial spines Normal sacrum Wide sacrosciatic notch (Case 47)

Discussion

Ball's method of pelvicephalography is comparatively new Further study will be necessary before its true value can be determined

Ball feels that a disproportion of 150 ml at the inlet constitutes a true disproportion In mid-pelvis, he states that 250 ml may not be a true disproportion, providing the posterior half of the pelvis is adequate He feels, further, that the head usually is able to mold sufficiently to overcome a disproportion of 150 ml

Our study has shown that we may expect a definitely increased operative rate with heads that show + readings Eighty-five per cent of the cases over +50 ended with operative deliveries We had

pelvis and in the other the head was in a faulty attitude

There were two fetal deaths in the group, one due to cerebral hemorrhage following axis-traction forceps with a +61 disproportion, the other to fetal distress without disproportion

In one instance a patient was scheduled for a cesarean The x-ray study failed to show a disproportion With our present limited knowledge of this method, it is probably not fair to say that this new adjunct saved this particular patient from section It is fair to say, however, that the x-ray study was a big factor in producing a very careful and minute study of this case

We shall make no effort to draw con-

clusions from this small series of preliminary studies. We do feel, however, that the results have been promising enough to warrant a thorough clinical investigation.

It would appear that this method may be of definite value in determining those cases of disproportion which should be terminated by cesarean section. It cannot be emphasized too strongly, however, that with our present knowledge, x-ray pelvimetry, alone, must not be relied on to solve this problem. There can be no question that the improper use of x-ray pelvimetry will lead to many unnecessary cesarean sections.

On the other hand, it would seem that

the Ball method of pelvicocephalography, if used in conjunction with the clinically proven procedures, namely pelvic mensuration, test of engageability and test of labor, will be of great value in determining the proper treatment of bony disproportion.

We wish to acknowledge cooperation of the Roentgenological Department of the College of Medicine, Syracuse University.

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VITAMIN C VALUE IN ORANGE AND TOMATO JUICE

Orange juice contains from two to three times as much vitamin C as tomato juice. Either of the juices loses vitamin C if allowed to stand before using. These results are announced by workers in the Bureau of Home Economics, U. S. Department of Agriculture. The Bureau points out, however, that when tomato prices are much lower than orange prices, it may be possible to get as much or more vitamin C protection per dollar from tomatoes. The tests included both chemical analysis and feeding trials of four varieties of oranges, two from California and two from Florida—fresh pressed juice of tomatoes and juice from a brand of commercial canned tomatoes. The juice of the California navel oranges was slightly richer than the others but some of the others were enough juicier so that the juice from a fruit of equal size gave as good or better protection. To obtain the same protection from tomato juice it would

be necessary to give two or three times as much juice.

The investigators, Esther Peterson Daniel, Mary H. Kennedy, and Hazel E. Munsell, found that the canned tomatoes which they tested contained as much vitamin C as the fresh sample. These tomatoes were grown in different sections of the country and since there is a loss of vitamin C in canning these results raise the question of the effect of soil and climate upon the amount of vitamin C formed in the plant.

The common household custom of squeezing orange juice at night to serve at breakfast causes a loss of ten per cent or more of its vitamin C value even though it stands covered in a refrigerator. Tomato juice from fresh or canned tomatoes also deteriorates when allowed to stand exposed to the air. This may amount to as much as a forty per cent loss if the juice stands for several days.

PSYCHOLOGY OF CAR DRIVERS

Dr. Richard H. Hutchings, superintendent of Utica State Hospital at the request of the commissioner of safety of the city of Utica, recently made a noteworthy statement relative to the psychology of car drivers, says the *Mental Hygiene News*. The following is an abstract of the statement:

It is a familiar experience that a person has a tendency to enter into the situation in which he finds himself and assumes a new personality different from what his ordinary one is at other times.

When one gets behind the wheel of a high-powered automobile, the power within the machine itself enters into his personality. The power which he can generate in the machine becomes transferred to power within himself. His ego becomes enlarged, he is all powerful

the rights of others become in the same degree insignificant, he becomes impatient with anything that balks or hinders him, such as slow traffic and red lights. It may be said that he has become intoxicated with a feeling of power—almost of omnipotence.

In this mood, a pedestrian is an annoyance to him. The pedestrian has no right to get in his way and he will take chances in his driving which he knows are dangerous, but which he disregards under the influence of his exaltation. We see somewhat the same thing with men under the influence of liquor. Such men, in proportion to their emotional maturity, have a tendency under provocation to be boastful and offensive to others. When one puts together a moderate amount of liquor and a high-powered machine a combination results which is a real menace to the safety of others.

SIMPLE MILK MIXTURES IN THE FEEDING OF PREMATURE INFANTS

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Many types of feeding mixtures have been recommended as suitable for the premature infant. The basis of most of these has been breast milk. It is given alone, combined with evaporated milk in varying proportions, or is reinforced by the addition of carbohydrate. But breast milk should not be looked upon as the *sine qua non*. The doctrine has often been promulgated that it is the only safe food for prematures and that any success with artificial mixtures is solely a matter of luck. Such a belief is a relic of the days when unhygienic methods in the collection, transportation, and storage of cows' milk often made it unsafe for human consumption, especially for those born before term. These conditions still exist in certain communities, but when one can be assured of clean cows' milk, its use in the feeding of premature infants is safe and, for many reasons, often desirable.

There can be no quarrel with the stand that breast milk is the most desirable food for the normal newborn infant, but with the premature, certain other factors must be considered. Breast milk is at times difficult to obtain as the child's own mother generally leaves the hospital after two weeks and milk from other patients may not be available. If the mother has to pump her own breasts and deliver the milk she may be unable for economic or

physical reasons to do so. Mothers' milk may be purchased but it is expensive and such an expense is often a burden to the family. In addition, breast milk containing but 1.5 per cent protein hardly seems suitable for the needs of such a rapidly growing organism as the premature infant. Therefore, in spite of the fact that an imposing array of statistics has been advanced to prove that breast fed infants are less likely to suffer from respiratory and gastrointestinal disorders than those artificially fed, it is felt that the sacrifices usually made to obtain breast milk are hardly necessary, especially since adequate substitutes are readily available. A feeling has existed that cows' milk could not be satisfactorily used as one of these substitutes and it is to call attention to the fallacy of this position that this contribution is offered.

In our hands milk mixtures with from eight to seventeen per cent carbohydrate and one to three per cent added protein, have proven extremely efficacious. The results with such formulae have been as good, if not better than those reported with the use of any of the other artificial foods or with breast milk, either alone or reinforced. Before presenting these observations it would be proper to state that of all the considerations entering into the care of the premature infant, nursing supervision is without question the

TABLE I

Case	Period of gestation	Cause of prematurity	Type Delivery	B Wgt	Lived	Diagnosis	Autopsy Findings — Remarks
St	26 wks	2 fingers dilated at 5½ months. Endocrine deficiency—irregular menstrual history	Vertex—low forceps	3 lbs	15 hrs.	Prem.	Atelectasis of lungs
Br	26 wks	?	Vertex—spon	3 lbs.	7 days	Prem.	Aspiration pneumonia fed pooled breast milk plus 5% D M
Do	7 mos	Frequent bleeding throughout preg	Breech	3½	17 hrs.	Prem	Atelectasis edema of lungs
Bl	7 mos.	Placenta previa—premature separation	Breech	3½	6 days	Cerebral hemorrhage	Subarachnoid hemorrhage over right temporal lobe and base of skull. Fed pooled breast milk plus 5% D M
Le	27 wks	Marked polyhydramnios	Vertex—spont.	3 lbs	8 hrs	Prem	Congestion of lungs, liver, spleen and kidney with marked atelectasis of both lungs.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, April 28, 1936

TABLE II

Name	Sex	Per of gest	Cause of prem.	Type of del.	B wgt. 2 ¹⁰	Low Wgt. 2 ⁴	Point Age 7 d	B wt. reg age 24 d	Weight 1 Mo 2 ¹⁵	2 Mo 4 ⁴	Dis Wgt. 4 ¹²	Age 10 w	Gain from Low Ozs. 43	Point Days 67	Gain After per day 65	Weight 6 Mos. 12 ¹⁵	1 Yr 17 ⁸	Type of Feeding— Remarks
S.S.	F	2S w	Twins	Vertex spon. broth. died breech	3	3	1 d	1 d	4	7 ¹	5 ²	6 w	33	41	8	12 ¹⁵	17 ⁸	Br M plus 7 to 10% carbohydrate 1 month then formula.
A.E.	M	2S w	Tox	Vertex spon.	3	3	1 d	1 d	4	7 ¹	5 ²	6 w	33	41	8	12 ¹⁵	17 ⁸	Br M. plus 7 to 10% carbohydrate
L.J.	F	7 m	Tox	Vertex spon.	3	2 ¹⁵	6 d	12 d	4	5 ⁴	5 ⁴	6 ¹ w	39	42	93	11 ⁸	left city	Br M. plus 7 to 10% carbohydrate & Form 3 wks. then Form.
E.B.	F	7 m	Tox	Vertex spon.	3 ⁴	3	2 d	4 d	4 ¹²	8	5 ²	36 d	34	34	1 0	13 ⁸	18	Br M plus 7 to 10% carbohydrate & Form 3 wks. then Form alone
T.T.	M	2S w	Prev left oophrec- tomy Irreg bleeding throat preg. with partial prem. sep placenta at onset of labor	Vertex spon	3 ⁴	3	7 d	15 d	4 ⁴	6 ⁷	4 ⁹	36 d	25	30	83	14 ¹⁰	22	Br M plus 7 to 10% carbohydrate & sim- ple milk mixts. 7 wks.—then com- pletely weaned
Average					3 ¹	2 ¹⁵	5 d	11 d					43	82				

most important, more important even than the incubator or the type of food employed

During the past few years sixteen consecutive infants weighing less than four pounds at birth have come under our care as private patients. Those of four pounds and over have been deliberately eliminated because they usually do well and so help bolster the figures of a statistical study.

Five of the sixteen patients failed to survive. A study of Table I best illustrates the findings and the causes of death.

In the next group, consisting of five patients, pooled breast milk reinforced with seven to ten per cent dextri-maltose was given for a period of from three to seven weeks. Simple milk mixtures with high caloric feedings were gradually sub-

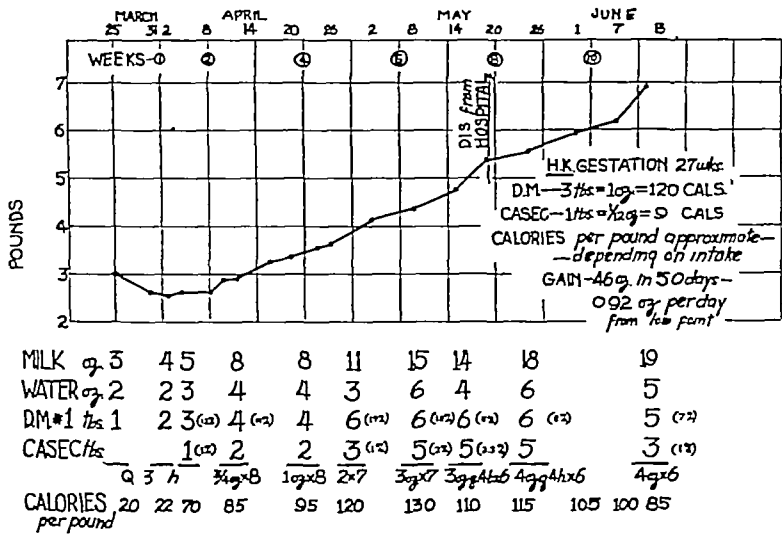
stituted. The findings can readily be observed by a study of Table II.

The third group consisted of six infants who received milk mixtures from the very beginning. The practice was to start with one-half milk and one-half water reinforced with dextri-maltose. Feedings were given every three hours commencing six hours after delivery. A five per cent sugar solution was also given every three hours, alternating with the formula. The patient thus received fluid every one and one-half hours. As the amount of formula taken gradually increased, the water feedings were decreased. Three of these infants received formulae containing an additional one to two per cent protein in the form of calcium caseinate and in one infant three per cent was added at the twelfth week, following which the weight gain,

TABLE III

Name	Sex	Per of gest.	Cause of prem.	Type of del.	B wgt.	Low wgt.	Point reg	B wt. reg	Weight 1	Dis.	Gain from Low	Point	Aver gain per day	Weight 6	Weight 1	Type of Feeding—Remarks		
P.H.	M	7m	Twins (other died following version and extraction) Wgt. 3 lbs.	L. O. A. spon.	2 ⁴	2 ⁴	7 d	13 d	3 ⁴	4 ⁴	6 ¹⁵	4 m 1 w	73	117	62	10 ⁴	15 ¹⁵	Milk mixt. Calcium caseinate added age 12 wks.
A.	F	27 w	Calcium defic.	Vertex spon.	2 ¹¹	2 ⁴	6 d	20 d	3 ⁴	5	6 ¹	11 w	60	70	86	12 ²		Milk mixture plus calcium caseinate
H.K.	M	27 w	-	Vertex spon	3	2 ⁴	5 d	19 d	4 ²	5 ⁸	5 ⁴	8 w	40	50	92	14	21	Milk mixture plus calcium caseinate
A.	F	7 m	-	Low for cephalic n.	3 ¹	3 ⁴	3 d	5 d	5 ²	7 ⁴	5 ²	1 mo	33	28	1 14	14 ¹⁰	20	Milk mixture
W.U.	M	8 m	Tox	Vertex spon.	3 ⁸	3 ¹	2 d	4 d	6	5 ¹⁰	5 ⁴	4 w	38	26	1 46	14 ⁹	19	Milk mixture plus calcium caseinate
A.B.	F	8 m	Contr. pelvis. Prem. rup. memb.	Ces.	3 ¹⁴	3 ¹⁰	2 d	4 d	5 ⁴	7	5 ⁴	1 m	30	29	1 00	13 ⁴	21 ⁸	Milk mixture
Average					3 ¹	2 ¹⁴	4 d	11 d					53	1 oz.				

CHART II

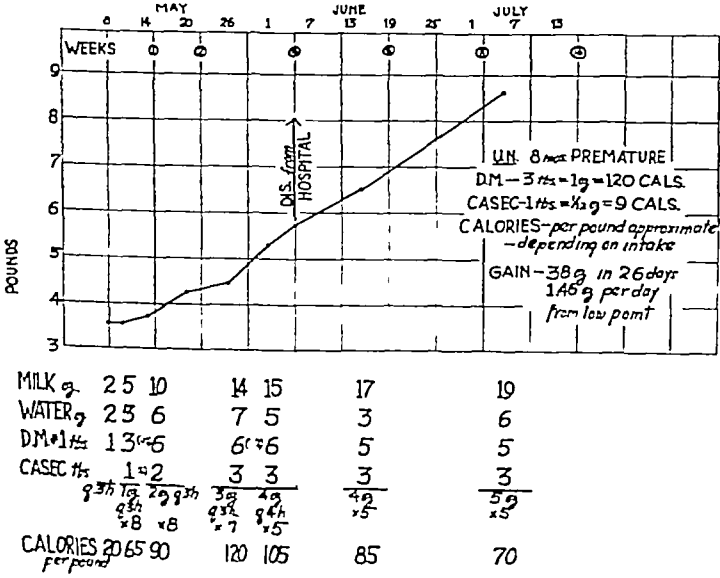


petite of the premature is capricious. The amount taken at each feeding varies, especially during the first two weeks of life. This can readily be appreciated by a study of Table IV which shows the intake in drams at various stages during the first month of a male infant, seven months gestation, birth weight three pounds

That the fluid intake of all prematures is not the same is quite evident. The amount taken by an eight month old pre-

mature, birth weight three pounds, eight ounces, far exceeded that in the previous case. By the second day he was taking from six to eight drams of the formula at each feeding with three to six drams of water in between, and by the end of the first week his fluid intake was almost one-fourth of his body weight. Naturally, the closer the fetus is to term the more he may be expected to take, all other things being equal

CHART III



Comment

From a study of the last group it was felt that simple milk mixtures reinforced with eight to seventeen per cent carbohydrate were safe and gave excellent results in the feeding of premature infants. The use of added protein in the form of calcium caseinate from one to three per cent seemed to accelerate this gain. A study of Charts I-III will illustrate the type of feeding and the progressive gain in weight. Attention is called to the high caloric intake. Feedings of as much as 120 calories per pound were given without upsetting the tolerance. The maximum amount of carbohydrate added was two ounces. The added protein was usually discontinued towards the end of the third month.

Conclusions

Simple mixtures of cows' milk with eight to seventeen per cent added carbohydrate in the form of dextri-maltose No 1 and one to three per cent added protein in the form of calcium caseinate have been found highly satisfactory in the feeding of premature infants.

Such mixtures with high caloric values, even up to 120 calories per pound, caused an average gain of one ounce daily from the low point in six premature infants whose average birth weight was three pounds two ounces. The average period of observation in the hospital from the low point was fifty-three days.

1085 PARK AVE.

HIGH LIGHTS AND LOW LIVES

A Detroit physician stated "If I want to give away my money, I should be the person who will dictate where that money is going, but if I want to give away my time in a dispensary, I find myself the only person who has absolutely nothing to say about it. That is why I'm now dispensing my charity service in my office and not in a so-called free clinic."

The American Indian "now has a birth rate that is probably the highest in the world," and his death rate is declining, according to Dr. Clark Wissler of Yale. Meantime the white birth rate is falling. If these trends continue, which will control the America of the future?

A woman went to see a doctor. "Doctor," she exclaimed loudly, bouncing into the room, "I want you to say frankly what's wrong with me."

He surveyed her from head to foot. "Madam," he said at length, "I've just three things to tell you. First, your weight wants reducing by nearly fifty pounds. Secondly, your beauty would be improved by freer use of soap and water. And thirdly, I'm an artist, the doctor is on the next floor."—*Montreal Star*

Freud, strangely enough, almost became the discoverer of cocaine anesthesia, says a writer in the *New York Times*. This discovery of Karl Koller's, hailed by an ad-

miring world in 1884, was based directly upon observations made by Freud in an essay upon the properties of the coca plant which he had published in the "Zentralblatt fuer Therapie."

Appointment of Dr. Nolan Don Carpenter Lewis as director of the State Psychiatric Institute and Hospital, a unit of the Columbia-Presbyterian Medical Center in New York City, is announced. He has been assistant professor of neurology at Columbia University and associate director of the Neurological Institute.

The best ten years of a woman's life lie between the ages of twenty-eight and thirty.—Health Digest

No outbreak of typhoid fever due to a contaminated public water supply has occurred in this State in five years, reports the State Health Department. Deaths from typhoid reached a new low point of 5 per 100,000 in 1935, only 316 cases were reported in that year.

Dr. Harold L. Barnes, Chairman of the Kings County Medical Milk Commission for the past six years, was elected President of the American Association of Medical Milk Commissions at the close of that body's recent annual joint conference with the Certified Milk Producers' Association of America, held in Kansas City.

THE PLACE OF SURGERY IN THE THERAPY OF PEPTIC ULCER

URBAN MAES, M D, and ELIZABETH M McFETRIDGE, M A, *New Orleans, La*
From the Department of Surgery of the School of Medicine of Louisiana State University

To one about to embark by invitation and by explicit direction upon a discussion of peptic ulcer, it is depressing to recall Wensky's comment that one year's crop of papers on that subject simply repeats the crop of former years. It is depressing, I say, because one realizes how perfectly one's own remarks fit into such a category. But repetition is sometimes commendable, especially when, as in this instance, it involves self-examination. It is part of our duty as physicians, it seems to me, to pause at intervals to take stock of our endeavors, to examine first principles in relation to results, and to analyze our experiences as contrasted with our impressions, which latter, in medical literature and practice, are often prone to masquerade as facts.

No more acrimonious debate has enlivened the annals of medicine than the argument between physicians and surgeons as to how peptic ulcer should be treated, and both parties to it have every reason for self-reproach. The surgeon has been so occupied with details that he has lost sight of principles, and his technic has frequently far outstripped his judgment. The medical man, on the other hand, has assumed credit for cures which nature wrought, or has reported as cures ulcers which never existed, and he has ignored entirely the mortality which followed his efforts at therapeutics.

I have recently analyzed 107 consecutive deaths from peptic ulcer from the records of the New Orleans Charity Hospital, and I know whereof I speak. Only seventeen of those deaths followed surgery which even by courtesy could be called elective. The other ninety deaths were due to the catastrophes of ulcer, sixty-nine followed perforation, thirty-two without benefit of surgery, and twenty-one followed hemorrhage, which in nineteen cases was treated only by medical measures.

Statistics may lie, statistics may confuse the picture, statistics may not tell the whole story. But granting those

things, the fact still remains that ninety of these 107 patients lost their lives from the accidents of ulcer, and more than a third of them were admitted moribund. Yet more than two-thirds of them gave a clear-cut history of ulcer and an equally definite story of some sort of medical treatment for it. All deaths which follow surgery must, I suppose, be classified as surgical deaths, but I have never been able to see why the physician who treats a patient up to the time he falls into the hands of the surgeon moribund or almost moribund from one of the accidents commonly associated with peptic ulcer should not at least share with him the onus of what happens.

There is no doubt that medical and surgical measures should be complementary and not antagonistic. There is no doubt that peptic ulcer is essentially a medical condition which requires surgical interference only after properly directed non-surgical measures have failed to bring relief. There is no doubt that always after surgery strict medical supervision is necessary, sometimes for a very long period of time. To be more specific, medical treatment is particularly indicated in all fresh or recent ulcers, in practically all young subjects, in most cases in which the disease is mild and the periods of exacerbation few and brief, in most nervous, high-strung individuals of the so-called ulcer type, who are not permanently benefited by any mode of therapy and whose symptoms are best controlled by medical measures, in poor risks, and finally, in all patients who have the leisure and the money to make a fair trial, or repeated fair trials, of nonsurgical treatment, provided that they understand exactly what chances and risks it involves. If they understand the decision they are making, the right of choice is most certainly theirs, and there can be no quarrel with their medical advisers.

But the acceptance of these indications does not by any means carry with it the

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 29, 1936*

acceptance of the claims made by some medical men for the management of peptic ulcer by nonsurgical measures. In the first place, many cures have been claimed for conditions which were not ulcers. It may seem a foolish qualification, Lord Moynihan says, to demand evidence of an ulcer before accepting the statement that it has been cured, but an ample acquaintance with the literature dealing with the supposed healing of fictitious ulcers makes him doubt—just as it makes any thinking reader doubt—whether this simple necessity is adequately recognized by many writers. Even with the most expert diagnostic methods there is still a large percentage of error. I do not care to recall the number of times I myself have opened the abdomen confidently expecting to find an ulcer, only to find something else, or sometimes nothing at all, and my experience makes me believe that the same fallacy must be present in many reports of cures in which only medical methods were employed and there was no direct proof of the diagnosis.

In the second place, I am unwilling to accept cures by medical measures when I know those measures are inadequate in themselves or have not been employed sufficiently long to make the cures credible. Operative evidence has shown that it is most unusual for an ulcer to heal completely under six months, and that some ulcers take three years or more. Relief follows much sooner, however, and we all know the difficulty, when a patient is relieved of his symptoms, of making him adhere strictly to the regimen necessary to correct his pathology. Sometimes the fault is the patient's, sometimes it is his physician's, but the end-result is the same. He is reported as a cure when he is merely undergoing a remission, which has been brought about more promptly by medical measures perhaps, but which is still only a remission. The ulcer is not healed, it will most certainly recur, and there is not the smallest justification for reporting such a case as a cure. I have operated on enough of them to speak confidently on that point.

In the third place, I cannot accept the facile statement that even if medical measures do not succeed, the patient is no worse off. He is distinctly worse, it seems to me, if he has a perforation that

carries him to the gates of death, or a hemorrhage that carries him through them. Those complications, pancreatitis, varying degrees of obstruction, all can occur under competent medical treatment and are likely to occur under the incomplete variety, which is the variety most usually practiced. Can a patient be regarded as cured, or even relieved, if he must aspirate his stomach every night? I should not consider myself cured under those circumstances, and I fear I should have only a languid interest in the academic distinction between obstruction due to inflammatory exudate and obstruction due to cicatricial tissue. I confess that I cannot quite comprehend the reasoning of the internists who advise this treatment for six months or more, with the proviso that if it fails, and if the patient is a good risk, surgery can then be employed. How he can be expected to be a good risk under those circumstances I do not quite see. And what is to happen to him if he is not a good risk is not anywhere provided for. I recall that in the seventeen deaths in the elective group of the fatal cases I have recently analyzed, four cases, at least, were there only by courtesy. Obstruction was the indication for surgery in them all, but no surgeon in his senses would have elected to operate on any of them had not the choice lain between probable death after surgery and inevitable death from starvation without it.

Finally, I object very seriously to the claim that there is no mortality after medical treatment. Its mortality is at least as high as the mortality for surgical treatment. I personally believe that surgery carries a lower death rate, even in the hands of only fairly expert surgeons, let alone surgeons of such fine judgment and high technical skill as Walton, Lord Moynihan, and the Mayo Clinic group. Are not deaths from massive repeated hemorrhage to be classified as medical deaths? Does not prolonged unsuccessful medical treatment lead the way straight to perforation? For that matter, accidents can occur even under supposedly successful medical treatment. One author, whose name I do not recall, reports eleven doctors who deliberately chose to be treated by medical measures and among whom three perforations occurred, one of which was fatal. Three

patients in the series of deaths I studied perforated in the hospital while they were presumably responding most favorably to supervised medical treatment. Indeed, no more devastating commentary on that subject can be imagined than Vale and Cameron's recent conclusion that the patient who suffers his perforation in the hospital, while undergoing treatment and while surrounded by all the resources of medical science, is more likely to lose his life than is the patient who is stricken in his home or on the street. I cannot agree, I repeat, that medical measures show a zero mortality.

The claim is frequently made that the end-results of medical treatment and the end-results of surgical treatment are the same. Again I cannot agree. That claim is based on a fallacy. It takes no account of the fact that surgery begins where medicine leaves off, and that every surgical case should really be listed as a medical failure. There is no disputing the fact, too, that as time goes on, the percentage of surgical cures is practically stabilized after the first year.

In the recent debate on the subject before the Fellowship of Medicine the decision for or against the medical or surgical treatment of uncomplicated ulcer was practically fifty-fifty. But such abstract debates, of course, prove nothing except that patients who are treated by rule of thumb are not likely to be very well-treated. No sweeping generalizations are possible, such as are permitted in appendicitis, for instance.

Before a continuation of medical treatment, an honest trial of which should always be the first consideration in peptic ulcer, or before a resort to surgery is decided upon, many factors must be taken into consideration. We have mentioned already the age of the patient, his physical and nervous constitution, his family history, his occupation, and his habits of life. There should be considered also his type of ulcer, the duration of his symptoms, and similar strictly medical matters. There should be equally careful consideration of such imponderable factors as the patient's enjoyment of life, and such highly practical ones as his economic status, and the necessity of his earning his own livelihood by the toil of his hands or his brain.

I am among those who consider economic indications a strong reason for surgery. I do not see how anybody, particularly in these days, can fail to regard them as such. There are a dozen applicants for every position, and few employers are likely to look with favor upon employees who must be absent from their work at fairly frequent intervals for fairly long periods of time. Strauss, who studied his cases from this aspect, reports that before medical treatment was undertaken, fifty per cent of his patients were on a fifty per cent earning basis, and that sixty-five per cent who were obliged to undergo repeated medical treatments did not work at all. After surgery—his surgery, I might say, is more radical than I myself favor as a routine—ninety-five per cent had returned to full-time employment within four to nine months.

Medical treatment is always a long-drawn-out method, and often is almost a life sentence. Jordan and Lahey require three weeks rest in bed in the hospital—not always the easy matter it sounds—with a return for observation, fluoroscopy, and estimations of gastric acidity every two months for the next year. Another internist, after the intensive period of treatment, specifies a six-meal bland diet for three years, with other restrictions as to work, rest, and recreation, followed by a permanent mildly restricted diet. Even Alvarez, whose treatment is the simplest and most practical that can be devised, very properly warns his patients that it must continue for an indefinite period. The investment of time and money is always large, and the return is frequently little more than an opportunity for a further and larger investment of the same sort.

My own opinion is that a patient, after a properly supervised trial or after several properly supervised trials of medical measures, should be given the benefit of surgery if he feels that he cannot afford the time and money and cannot so change his life as to continue this mode of treatment. I think the indication is the stronger the more promptly symptoms recur after this form of therapy has been tried, particularly when cicatricial obstruction is present, or persistent pain suggests pancreatic involvement. I would put into the same category ignorant and indigent

patients, patients who lack the will or the intelligence to follow directions literally, and patients who feel that family and business reasons demand their quick restoration to health. In other words, I agree entirely with Lord Moynihan that adequate medical treatment frequently represents a counsel of unattainable perfection, and that the problem is usually not one of medicine but one of social economics.

I do not propose to dwell at any length on perforation as an indication for surgery. Naturally, the acute variety furnishes an urgent indication, and even when the patient is seen after several days, conservative measures should be adopted with a full comprehension of the risk they carry with them. In what majority of ulcers perforation occurs is not definitely known. Graves, from a survey of the world literature, estimates it at ten per cent. The mortality, too, varies considerably, but twenty to twenty-five per cent is a very conservative estimate. The number of lives lost, therefore, is by no means small, and even though there is no way of foretelling in which cases the accident is likely to happen, it would seem that surgery should be done far more frequently than it is to prevent its occurrence. The history is rarely correctly taken on these gravely ill patients, but if it were, I feel sure that a story of digestive disturbances typical of ulcer would be elicited in at least ninety-five per cent of them. I believe, too, that the pre-perforation syndrome could be elicited in a very fair number of cases, and surgery done to forestall it, if only we took the trouble to study the significance of a sudden exaggeration of the usual discomfort and pain. The important thing to note is that perforation is practically always associated with chronic ulcers, and that persistence in medical treatment that has not proved its worth is most certainly a frequent cause of the catastrophe. It is worth remembering, too, that this type of accident is most frequent in the lower social levels, in which, as we have already pointed out, medical treatment is least apt to succeed.

How acute hemorrhage should be treated is still a matter for discussion. Like most surgeons, I have both operated and refrained from operation for it, and

have usually regretted whichever I did. Some authorities take the position that hemorrhage from a peptic ulcer is never surgical, which is in direct contradiction to the principles of controlling hemorrhage elsewhere in the body. It is in direct contradiction, too, to the frequent autopsy finding that the bleeding is caused by a single vessel, which presumably could have been controlled by surgery. Why the advocates of medical treatment should find comfort in the fact that the ulcer is often healed right up to the mouth of the bleeding vessel I have never been able to discover. Some physicians take the position that the first hemorrhage is never surgical. Wilkie advises medical treatment for the first hemorrhage, with operation ten days after the second, and frankly reports the loss of three patients by that plan. Finsterer regards hemorrhage as just as urgent an indication for immediate surgery as is perforation. Rienhoff points out that hemorrhage on the posterior duodenal wall amounts to a posterior perforation into the pancreas and can be benefited only by surgery. Allen and Benedict believe that surgery is always indicated in patients advanced in years, a point of view which my own experience corroborates.

Whatever may be one's ideas as to how hemorrhage from peptic ulcers should be handled, certain facts should be emphasized.

- 1 Bleeding ulcers are a constant source of danger, and, while surgery does not offer one hundred per cent protection, at least the results of elective surgical measures seem to be better than the results of medical measures.

- 2 The teaching that few deaths occur from hemorrhage, especially from the first hemorrhage, is unjustified optimism, about twenty per cent of the deaths at Charity Hospital were due to hemorrhage, and I am sure that proportion holds true in many other clinics.

- 3 Remissions are entirely unreliable, in twelve of the twenty-one deaths from hemorrhage at Charity Hospital there was a fatal recurrence of the bleeding while the patients were apparently well on their road to recovery under medical management.

From that standpoint, then, though I make no pronouncements on the subject, it might seem logical to operate while the patient was still in good or fair condition,

rather than be forced to surgery later, when he was exsanguinated from recurrent hemorrhage

I have never been willing to consider gastric and duodenal ulcers together, and I am gratified to have in that idea the company of such distinguished physicians and surgeons as J M T Finney, Sr, Peck, Merle Scott, Alvarez, Walton, Lord Moynihan, and the Mayo Clinic surgeons. Here I am concerned only with one aspect of that differentiation, the tendency, or the possibility, as you will, of the development of malignancy. That tendency is evident in gastric but not in duodenal ulcers, and I am unwilling to treat gastric ulcers medically on that basis, if no other. I am not concerned with the exact percentage which become malignant, though I cannot share the light-hearted view of those who believe an incidence of five to ten per cent is not sufficient to warrant surgical measures. I share Lord Moynihan's opinion that neither the operative nor the autopsy evidence of the transition is reliable, because the earlier pathologic state is likely to be overlaid by the later malignant disease.

The important consideration, however, is not that some ulcers end as cancer, and some supposed ulcers were always cancer. The important consideration is that even by the most expert clinical and laboratory diagnosis the differentiation between ulcer and cancer is not even approximately accurate. The error may run to twenty-five per cent or higher. In the seventeen elective cases in the Charity Hospital series, operation was undertaken in eight on the belief that the condition was cancer. In 200 surgical cases of cancer which we recently studied from the same institution, fifty of the patients told stories perfectly typical of ulcer, and, more tragic, twenty-nine of them had been treated for it and lost their lives as a result of the mistake.

Generalizations are not safe. It is true that the larger the defect as demonstrated by x-ray, the greater the chance of cancer. It is true that the longer the history, the more likely is the lesion to be benign. Those statements hold for most cases, but are incorrect in enough to make them not only useless but dangerous. A guess, to quote Lord Moynihan again, is a poor peg on which to hang a man's

life. McCarty's figures for the ulcer-cancer transition may be too high, but there is an element of safety in them which is overlooked by those who refuse to accept them. I find Walton's comment very significant, that his percentage of operability in cancer, which reasonably should be higher now than it was ten years ago, actually is ten per cent lower, the explanation being that many cancers were diagnosed as ulcers and were treated by medical measures until they were beyond cure.

If it is often impossible, without microscopic study, to differentiate between ulcer and cancer when the lesion lies before one, it is unlikely that the distinction can be made safely or accurately when the abdominal wall intervenes. Patients with a typical history of ulcer, with laboratory findings typical of it, with a confirmatory radiologic diagnosis, often prove the utter unreliability and worthlessness of that evidence by dying of cancer. Even the criteria set down by Lahey and Jordan and by Scott and his associates are not entirely safe. Response to treatment, even with x-ray evidence of improvement, is not necessarily a proof of benignity. "A degree of clinical silence" may follow rest and dietary management, even in malignant disease, and the period of delay may turn the tide against the patient.

I would not have you believe, however, that I advocate a quick resort to surgery. Far from it. I am entirely without sympathy for the surgeons who undertake dangerous operations, as all gastric operations are, with a light-hearted indifference to their possible consequences. The fact that often death and poor results can be charged to gross personal incompetence and are not really failures of surgery is poor consolation to the victim of these errors if he survives, or to his family and friends if he does not. I firmly believe that much of the unwillingness of medical men to advise surgery for peptic ulcer is due to the tendency of many surgeons to take unnecessary risks. The performance of gastroenterostomy in cases in which the ulcer cannot be demonstrated or for which it is not suitable, is one example. The unnecessary performance of gastrectomy is another. Undoubtedly this operation is justified in most cases of gastric ulcer,

but it is rarely if ever warranted in duodenal ulcer I can see no point to subjecting a patient to a risk several times higher than is necessary in order to protect him against a possible marginal ulcer, when his chances of being cured by less drastic measures are eighty per cent or more. That, says Rienhoff, is like playing the trump card first. Furthermore, I seriously question whether the incidence of jejunal ulcer is as high as some authors make it out, many of them, I note, make no allowance in their estimates for the cured patients who do not return. Dr Finney considers that resection as a punishment for duodenal ulcer is out of all proportion to the crime, and adds that it just goes to show how tolerant to punishment the human organism is.

Ryle, in concluding his excellent paper on duodenal ulcer, says that the physician's most important contribution to its prophylaxis is the general advice to nervous individuals in an age which has largely lost its old simplicities. His most important contribution to its therapeutics, he continues, is the observation of the entire disease and the qualities of its victims, to achieve a wise balance in the choice of therapeutic methods. Dr Finney hits the nail on the head even more exactly—and incidentally deflates a good many medical and surgical balloons—when he says that after all nothing is followed by such satisfactory even if temporary relief as leaving everything and going fishing.

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EDUCATION NEVER ENDS

The new President of the Medical Association of the State of Alabama, Dr Charles Alston Thigpen, of Montgomery, took occasion to remind his medical brethren in his inaugural remarks that the physician who assumes the attitude that his education is complete upon receiving a piece of parchment in the form of a medical diploma will prove both a failure to himself and a menace to the community he pretends to serve. At this point he has, in truth, but taken the first step of his professional education, he must continue a student throughout life, preserving and cultivating an analytical and

intellectual attitude towards all problems presenting in the busy routine of his daily life. He must early learn that the practice of scientific medicine of today compels the physician to so enlarge his horizon and his scope of vision as to embrace not only the sick individual but also the family group and the community as well. The cure of disease cannot and should not be separated from its prevention, and the conscientious physician who views his profession as an integral and important part of society finds himself in position to make lasting contributions to his fellowman, regardless of where his lot may be cast.

District Branch Meetings

The Annual Meetings for 1936 have been arranged on the following schedule:

October 1, Thursday—Fifth District Branch—Rome

October 2 and 3, Friday and Saturday—Fourth District Branch—Plattsburgh

October 7, Wednesday—First District Branch—Morrisania Hospital, New York City

October 15, Thursday—Eighth District Branch—Buffalo

November 19, Thursday—Second District Branch—Garden City

DIAGNOSIS AND TREATMENT OF PERIPHERAL VASCULAR DISEASE BY PHYSICAL AGENTS

WILLIAM BIERMAN, M D, *New York City*

During the past few years many advances have been made in the diagnosis and treatment of peripheral vascular disease. Of these, a goodly number have been physical in their nature. It is the purpose of this paper to call attention to some of them.

Physical treatment procedures are essentially physiologic aids. They do not combat the etiologic factors. Yet, they are frequently responsible for the arresting of the progress of the local vascular pathology and for its improvement to an extent which permits restoration of function of the involved extremities.

For many years physical measures have been employed in the treatment of conditions like thromboangitis obliterans and arteriosclerosis. The obviously inadequate peripheral circulation clearly indicated the use of circulation-stimulating heating measures such as heating hoods (so-called "bakers"), hot soaks, hot packs, and contrast baths. These measures, while of great value in many cases, prove to be of little benefit in others. They are essentially methods of applying heat and require, therefore, that they be applied with an appreciation of the concept of *heat dosage*. The physician does not administer several ounces of the tincture of digitalis to his cardiac patient because a few drops have proven to be of value. He appreciates the fact that there is such a thing as an optimum quantity—which if exceeded may do harm and which if diminished may be of little value. This concept of dosage holds equally true for the application of heat, particularly to extremities whose circulation is subnormal.

Landis¹ showed that the capillary pressure is raised to a considerable degree by an elevation in the temperature of the tissues. Thus while in the skin of the finger he obtained, under normal room conditions, a pressure of about thirty-two mm Hg in the arteriolar limb of capillary loops and about twelve mm in the venous limb, he found these values raised to sixty mm. and

forty-five mm at 107.6° F. Since the osmotic pressure of the plasma proteins in man is about twenty-six mm Hg this implies a filtration pressure of edema formation equal to the difference, or some twenty-five to thirty mm of Hg. Presumably this fluid would drain away through the lymphatic system, under normal conditions.

Of interest also is the work of Goldschmidt and Light² who showed that the venosity of venous blood returning from a limb depends upon the balance between the metabolism and rate of the blood flow. Both of these are increased by a rise in temperature. The changes are not parallel. At high temperatures the rate of circulation was increased so greatly that the venous blood contained large amounts of oxygen even though the metabolism was undoubtedly much increased. Bazett and Sriyatta³ demonstrated that when the temperature is elevated not only is there a change in the oxygen saturation of venous blood, but physicochemical factors are brought into play which considerably modify gas tensions by causing the dissociation of oxyhemoglobin and by modifying the acid-base balance and blood pH.

These physiological investigations indicated that while the application of heat produces a vasodilatation and, therefore, an increase of the collateral blood-bed when the normal vascular channels have become partially or completely occluded as a result of disease, it is possible to aggravate the diseased condition by the application of too much heat. Depending upon the degree of pathologic involvement in a given case there is an optimum amount of heat which can be applied.

In 1931 Starr⁴ indicated this to be his experience in the clinical care of individuals suffering from vascular disease of the lower extremities. He determined this optimum temperature by placing the involved extremities in a large water bath equipped with a stirring device and

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, April 29, 1936

but it is rarely if ever warranted in duodenal ulcer. I can see no point to subjecting a patient to a risk several times higher than is necessary in order to protect him against a possible marginal ulcer, when his chances of being cured by less drastic measures are eighty per cent or more. That, says Rienhoff, is like playing the trump card first. Furthermore, I seriously question whether the incidence of jejunal ulcer is as high as some authors make it out, many of them, I note, make no allowance in their estimates for the cured patients who do not return. Dr Finney considers that resection as a punishment for duodenal ulcer is out of all proportion to the crime, and adds that it just goes to show how tolerant to punishment the human organism is.

Ryle, in concluding his excellent paper on duodenal ulcer, says that the physician's most important contribution to its prophylaxis is the general advice to nervous individuals in an age which has largely lost its old simplicities. His most important contribution to its therapeutics, he continues, is the observation of the entire disease and the qualities of its victims, to achieve a wise balance in the choice of therapeutic methods. Dr Finney hits the nail on the head even more exactly—and incidentally deflates a good many medical and surgical balloons—when he says that after all nothing is followed by such satisfactory even if temporary relief as leaving everything and going fishing.

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EDUCATION NEVER ENDS

The new President of the Medical Association of the State of Alabama, Dr Charles Alston Thigpen, of Montgomery, took occasion to remind his medical brethren in his inaugural remarks that the physician who assumes the attitude that his education is complete upon receiving a piece of parchment in the form of a medical diploma will prove both a failure to himself and a menace to the community he pretends to serve. At this point he has, in truth, but taken the first step of his professional education, he must continue a student throughout life, preserving and cultivating an analytical and

intellectual attitude towards all problems presenting in the busy routine of his daily life. He must early learn that the practice of scientific medicine of today compels the physician to so enlarge his horizon and his scope of vision as to embrace not only the sick individual but also the family group and the community as well. The cure of disease cannot and should not be separated from its prevention, and the conscientious physician who views his profession as an integral and important part of society finds himself in position to make lasting contributions to his fellowman, regardless of where his lot may be cast.

District Branch Meetings

The Annual Meetings for 1936 have been arranged on the following schedule:

October 1 Thursday—Fifth District Branch—Rome

October 2 and 3, Friday and Saturday—Fourth District Branch—Plattsburgh

October 7 Wednesday—First District Branch—Morrisania Hospital, New York City

October 15 Thursday—Eighth District Branch—Buffalo

November 19, Thursday—Second District Branch—Garden City

vised by Buerger has been developed by Dr Saunders⁹. In this, the entire bed upon which the patient lies is slowly rotated so that the extremities may be elevated and depressed.

About five years ago it occurred to me that if it were possible to diminish the atmospheric pressure around the lower extremities as the heart's contraction propelled the blood into the peripheral vascular tree, the flow of blood would be encouraged in blood vessels where, because of pathologic involvement, it had become restricted. I planned to time the occurrence of the negative pressure with the increase in systolic pressure in the blood vessels of the extremities. This was to be followed by an application of positive pressure to the leg during the phase of diastole so as to encourage the return flow through the veins. I found that the mechanism required for this purpose would be too intricate and expensive, so I compromised on a small apparatus which permitted me to alternately evacuate and compress the air surrounding the leg, the change being made by a manually-controlled switch. About two years later I became aware of the work of Landis¹⁰ and of Herrmann¹¹. The basic idea I subsequently learned had been referred to by Junod¹² in 1833.

During the past few years various commercial organizations have been manufacturing positive-negative pressure apparatus to be applied to the lower extremities. Most of them follow the principles emphasized by Herrmann,¹³ namely, that the cycle of pressure changes be produced four times per minute, that they be produced gradually, that the pressure vary from -80 to $+20$. Landis¹⁴ advises that the number of cycles be two per minute, that the duration of the negative (partial vacuum phase) be twenty-five seconds and the positive about five seconds, that the changes be produced abruptly, and that the degree of negative pressure vary from -100 to -120 mm Hg and the degree of positive pressure from $+80$ to $+120$ mm Hg.

Varying reports as to the efficacy of this form of treatment have been made by several workers. It appears to be the general opinion that alternate positive and negative pressure therapy is of value in the treatment of some cases of arterio-

sclerosis, particularly where the major involvement is of the larger and medium-sized vessels. If the capacity for distension of the arterioles and capillaries does not exist, but little help may be expected from the use of this measure¹⁵. In the treatment of cases of sudden vascular occlusion due to emboli, Reid and Herrmann,¹³ and Conway¹⁵ have reported satisfactory results, but de Takats¹⁶ reports contrary findings. In view of the spontaneous improvement which occurs occasionally and the possibility of surgical removal of the embolus if the case is seen sufficiently early, the determination of the exact value of positive-negative pressure in this condition is still a matter to be decided. In the treatment of thromboangitis obliterans, the results in general are reported as unsatisfactory, although Herrmann and Reid¹³ in this disease found beneficial effects. Among the reasons for the differences in therapeutic results obtained in the treatment of this condition and that of arteriosclerosis may be the fact that in thromboangitis obliterans the veins as well as the arteries are involved.

A defect in the positive-negative pressure apparatus as it exists today is the fact that compression is made around the leg by the cuff used to seal off the device into which the leg is placed. This pressure must be adequate to maintain the vacuum produced within the device and also the positive pressure. No matter how carefully arranged, the pressure of the cuff does cause some embarrassment to the venous circulation and, also to a lesser extent, the arterial circulation. This is a primary deficiency in the apparatus now available. It may be possible to overcome this objection by placing the entire lower extremity in a device so that the constricting cuff may be made to encircle the lower abdomen and thus remove the pressure upon the vascular channels of the lower extremity.

The diagnosis of peripheral vascular disease has been facilitated by physical means which have been made available in recent years. For usual purposes, the old stand-bys of inspection to observe color changes (a determination improved by the color charts of Sir Thomas Lewis), palpation to determine roughly the coolness or warmth of the extremity, and also to

a heating unit. He found this optimum temperature usually was at the level of about 93.2° to 95° F. At this temperature elevation the cyanosed feet approached the most normal color and the pain became lessened. He heated these patients by placing them in bed and covering their legs with a foot cradle containing heating elements and equipped with a thermostat to maintain the temperature inside of the cradle at the previously determined optimum temperature level. The cradle was kept in operation constantly for twenty-four hours a day. Subsequently Starr⁶ added oxygen to the air in the cradle. The concentration of this gas reached a level of eighty per cent. He used this additional procedure in the treatment of gangrene. He also added calcium chloride placed in pans within the cradle to keep the air dry to cause a dehydration of the gangrenous part.

It is my opinion that, in general, of all the physical measures available for the treatment of peripheral vascular disease, the thermostatically controlled heating hood is the most valuable.

Larger quantities of heating energy such as the conversive heat developed by diathermy and short wave current machines should be cautiously applied. During the initial treatments the energy used should be decidedly less than that used in the treatment of an extremity with intact circulation. Any evidence of harmful effects such as increase in pain or the development of or increase in the cyanosis of the treated part calls for cessation of this form of therapy or a reduction in the quantity of energy used. The diathermy current may be applied in various ways. For example, one electrode may be placed under the lower back and another upon the under surface of the foot, or one electrode may be put on the anterior aspect of the thigh while the other is placed on the calf. The short wave currents may be applied in a similar manner, or by means of a coil encircling the leg. These treatments are usually applied every other day. They are frequently of definite value.

Brown⁷ of the Mayo Clinic has advocated the intravenous injection of typhoid vaccine to produce elevation of body temperature. He considers this

a very useful measure in the treatment of peripheral vascular disease. I have treated cases by means of systemic temperature elevation produced through physical agencies, and the results in most of these cases have been unsatisfactory. One particularly brilliant result was secured in a young man who suffered from thromboangitis obliterans. He was unable to walk a short city block without stopping because of the pain. After a series of eight treatments his condition improved markedly so that he was able to secure a position which required him to remain on his feet and move about for several hours a day. There has been no regression, but, on the contrary, some further improvement in this condition during the past four years. In spite of this dramatic result, my general experience leads me to the conclusion that if heat is to be applied to cases of thromboangitis obliterans, it is best applied by means of the thermostatically controlled heating hood rather than by physically induced fever. In view of the period of initial vasoconstriction after the injection of typhoid vaccine, it appears more logical to use physical means where it is desired to induce the elevation of systemic temperature in the treatment of this condition. Adson⁷ advises that following the intravenous injection of typhoid vaccine, the increase in the skin surface temperature of the big toe should be at least twice as much as that of the systemic temperature to indicate that it would be of value to perform a sympathetic ganglionectomy.

Exercise was advised by Buerger⁸ who developed a series of motions designed to increase the circulation. With the patient lying in the supine position, the extremity is elevated 60 to 90° above the horizontal for the minimum time required to produce ischemia (thirty seconds to three minutes). It is then allowed to hang down over the end of the bed until one minute after the appearance of the reactionary rubor (two to five minutes). The leg is then held in the horizontal position for three to five minutes. These procedures may be repeated for one half hour to one hour.

A new apparatus for the mechanical production of exercises like those ad-

temperature of the big toe. By means of such determinations I have observed that acetyl salicylic acid causes vasodilatation. This drug frequently gives greater relief to the sufferer from pain due to insufficient circulation of the extremities than does morphine. The smoking of tobacco usually causes a drop in the skin surface temperature. Smoking should therefore be strictly forbidden to the individual suffering from peripheral vascular disease, as has been emphasized¹⁹

Alcohol causes a peripheral vasodilatation. The effect of whiskey seems to be more marked than that of wine. Coffee causes a vasoconstriction of the blood vessels of the lower extremities. The great majority of twenty-five normal subjects who ingested two cups of coffee (taken at a temperature of approximately 100° F) showed a lowering of the skin surface temperature of their big toes. No particular change of temperature occurred in these subjects, however, following the ingestion of decaffeinated coffee. The injection of caffeine with sodium benzoate

intramuscularly caused a fall in the skin surface temperature of the toe. This also occurred when the subject took caffeine citrate by mouth.¹⁸ From these observations it would appear advisable to caution the sufferer from peripheral vascular disease against the taking of caffeine. Intravenous administration of hypertonic salt solution causes an elevation in toe temperature. The temperature-increasing influence of hot baths, phototherapy, diathermy, and short wave currents has also been demonstrated.

The objective evidence gained by means of the thermocouple will permit us to evaluate the effects of many other drugs and procedures, so as to enable us to rationalize their application in the treatment of peripheral vascular disease. The development of new physical procedures promises to greatly extend our ability to diagnose and to give physiologic relief to sufferers from peripheral vascular disease.

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Discussion

DR. KRISTIAN GOSTA HANSSON, *New York City*—Dr Bierman's paper is a very comprehensive review of our present knowledge of peripheral vascular diseases and their treatment by physical agents.

I agree with Dr Bierman as to the importance of the thermostatically controlled heating hood in these pathologies. I like to emphasize the low grade of temperature and the long period of exposure.

I would like to add a few words about my own experience with pressure-suction machines. I have been interested in this form of treatment for the last two years, and have under my supervision three of these machines, which are occupied all day long. I use the machine devised by Herrmann of Cincinnati with a positive pressure of

twenty mm Hg and a negative pressure of eighty mm Hg, and three cycles per min. Such passive vascular exercises exert a powerful mechanical action on the capillaries and cause the collateral arterial pathways to enlarge slowly. Therefore it becomes evident that we must have a certain amount of elasticity in capillaries and arterioles, and there is a danger of spreading infection and dislodging thrombi by this form of treatment. However, in an elastic capillary bed, and in the absence of infection and thrombophlebitis, these pressure-suction machines offer a valuable addition to therapeutics of peripheral vascular diseases.

Careful clinical history and physical examination, including palpation of peripheral

discover the presence or the absence of pulsations in the dorsalis pedis and posterior tibial arteries are still among the most valuable routine measures.

The Pachon oscillometer which indicates the gross pulsations in the extremity is of definite benefit in the objective determination of changes. It does not, however, furnish an accurate quantitative measure of circulatory efficiency. In a case of aneurysm of the popliteal artery, for example, the oscillometric oscillations showed almost a complete absence of pulsations while other evidences—clinical appearance, ability to walk, thermal reactions—indicated the presence of a highly-developed collateral circulation.

The systemic temperature of the body is maintained within a narrow range in spite of the marked variations in its metabolism and in the temperature of its environment. The body has a delicately attuned thermoregulatory mechanism. This permits it to continuously balance heat loss and heat production. The major mechanism by means of which heat is conserved or lost appears to be the vasoconstrictor and vasodilator apparatus of the blood vessels of the skin of the extremities. The marked fluctuations of temperature in this region can be measured by means of skin surface thermocouples. The area of the skin surface of the big toe is the region which seems to fluctuate the most. Under usual environmental conditions, there is a declining gradient of surface temperature from the torso to the peripheral portions of the extremities.

We can utilize the fluctuations of toe temperature for diagnostic purposes. If the temperature level is threatened by the application of heat to any part of the body such as, for example, by immersing the forearm in hot water at 110° F., the temperature of the skin surface of the big toe is seen to rise to a level approximately that of the level of the surface of the forehead. The skin gradient which normally obtains under ordinarily comfortable environmental conditions becomes obliterated. If there be any occlusive difficulty due to organic changes in blood vessels, this rise does not occur or is much retarded.¹⁷ This may be readily demonstrated by observing the toe temperature of normal subjects with and

without constriction of the leg by means of a cuff which is inflated to a pressure of about sixty mm Hg. The temperature of the toe of the constricted leg will be found to rise but very slightly, while that of the unconstricted leg will rise to a temperature level of the skin surface of the forehead. The temperature of the forehead appears to be relatively stable so that it serves as an excellent criterion for purposes of comparison.

In arteriosclerosis, thromboangitis obliterans, varicose veins, and embolism, the temperature of the skin surface of the toe rises very little, if at all, on immersion of the forearm in hot water. We are thus enabled to differentiate between vessel spasm and organic difficulty. Immersion of the forearm in cold water causes a reduction in the skin surface temperature of the toe unless some organic difficulty be present to prevent it.

When a moderate amount of heat is applied directly to the lower extremities as by means of a hood, the temperature inside of which is maintained at a relatively fixed level by means of a thermostatic mechanism, I have observed that the skin surface temperature of the toe gradually rises to a level a little below that of the temperature of the forehead in the normal subject, it rises quickly and above this level in arteriosclerosis, and slowly and to a point decidedly below this level in varicose veins. In thromboangitis obliterans, the rate and degree of rise resembles that of the normal, inasmuch as there is involvement of both arteries and veins in this disease.¹⁸

The direct application of cold air to the lower extremities causes a rapid fall in skin surface temperature. This response is delayed and diminished in the presence of vascular disease such as arteriosclerosis and thromboangitis obliterans.

During inhalation anesthesia and spinal anesthesia, the temperature of the skin surface of the toe rises in the normal person, but not where there is organic peripheral vascular difficulty. During local anesthesia there normally occurs a rise in the temperature of the skin in the region supplied by the blocked nerves.

The vasodilator or vasoconstrictor influence of food and drug products may be determined in the living subject by observing the changes in the skin surface

temperature of the big toe. By means of such determinations I have observed that acetyl salicylic acid causes vasodilatation. This drug frequently gives greater relief to the sufferer from pain due to insufficient circulation of the extremities than does morphine. The smoking of tobacco usually causes a drop in the skin surface temperature. Smoking should therefore be strictly forbidden to the individual suffering from peripheral vascular disease, as has been emphasized.¹⁹

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twenty mm Hg and a negative pressure of eighty mm Hg, and three cycles per min. Such passive vascular exercises exert a powerful mechanical action on the capillaries and cause the collateral arterial pathways to enlarge slowly. Therefore it becomes evident that we must have a certain amount of elasticity in capillaries and arterioles, and there is a danger of spreading infection and dislodging thrombi by this form of treatment. However, in an elastic capillary bed, and in the absence of infection and thrombophlebitis, these pressure-suction machines offer a valuable addition to therapeutics of peripheral vascular diseases.

Careful clinical history and physical examination, including palpation of peripheral

pulses, oscillometric studies, x-ray, and skin temperatures, should precede any treatment

The results so far obtained indicate that

- 1 It is superior to any other treatment in acute peripheral circulatory stasis such as frostbite.
- 2 In arteriosclerosis obliterans about eighty per cent are improved
- 3 In acute vascular occlusion, thrombosis, embolism or operative ligation of arteries, it helps to maintain the collateral circulation and may save an amputation. We have had eleven of these patients with definite benefit to at least nine of them
- 4 In thromboangitis obliterans, it is of value only in early cases
- 5 It is of decided benefit in impaired circulation of polio patients who suffer much in cold weather
- 6 I have also seen favorable results with this treatment in rheumatoid arthritis with skin atrophy

In the pressure-suction apparatus, we have a valuable addition to therapeutics. It is new and will be much abused in its application. Careful clinical observations are therefore necessary. Let me repeat that we must have a capillary bed that is capable of constriction and dilatation, and we should avoid pathologies that might be disseminated through the circulatory system.

DR JOSEPH KOVACS, *New York City*—There are many highlights in Dr Bierman's presentation, but I think the most important one is his conception of *heat dosage*. Heat, like any other medication, overdosed can do lots of harm—especially in peripheral vascular disease. (The circulation in a normal extremity is increased as the local temperature is raised. This increase is caused partly by the increased metabolism of the tissues.) In an extremity affected by organic obliteration of the vessels there is in normal conditions an inadequacy present between the blood supply and tissue need. Application of external heat will only increase the existing disproportion. Raising the temperature will increase the collateral

blood flow slightly, but will surely increase the blood needs of tissues. Pain will be increased and even gangrene may be produced by injudicious application of heat. In obliterative vascular diseases, if any heat is applied, it should not exceed 95° F. I fully agree with Dr Bierman that if heat is applied, the thermostatically controlled heating hood is the most valuable—but in contrast we have found typhoid injections properly administered the most satisfactory form of treatment for thromboangitis obliterans. Initial constriction in the stage of chill is rather a theoretical than practical disadvantage and can be nearly eliminated or reduced by proper dosage. In over 8000 injections given in our vascular clinic we have not seen any untoward effects.

As Dr Hansson discussed the results with negative-positive pressure apparatus, I would like only to mention that we obtained similar if not better results in intermittent claudication with tissue extract injections using 568-T E. Frostbites seem to me the most important indication for negative-positive pressure treatment, and I have seen spectacular improvements. In thromboangitis obliterans the results were unsatisfactory and in many cases treatments have had to be discontinued due to a newly developed plebitis.

I am sorry that Dr Bierman had no time to report his experience of the treatment of spastic vascular disease, as Raynaud's disease.

I will only mention that we experimented with mecholyl iontophoresis in the spastic form of vascular diseases and the results have been very encouraging. Similarly we have very good results with this form of treatment in varicose ulcers. I wish to call your attention to our scientific exhibit on varicose ulcers in the booth of the Vascular clinic of the Post-Graduate hospital where the technic and results of treatment can be seen.

THE FIRST TEN YEARS ARE THE WORST

The Doctors' Symphony Orchestra of Akron, Ohio, ended its first decade with its 61st concert in June. It will open its eleventh season this fall.

Thus a group of physicians and dentists with a recruiting field limited as to the personnel and, during the past five years, with no outside financial support, except donations from a few medical friends, have by their own efforts accomplished what no other group in Akron has been able to do, that is, maintain a symphony orchestra. During its ten years the Orchestra has had the goodwill of the professional musicians and their

Union because it has refused to play on any occasion which would deprive musicians of "pay jobs." In other American cities, Newark, N. J., Seattle, Detroit, etc., doctors orchestras have been formed, but it is to be regretted that they did not last. Only the medical and dental professions of Summit County have succeeded. During its ten years there have been changes in personnel each year and no less than sixty-five members of the two professions have been members of the Orchestra. The strength of the Orchestra at the concert of June 7 was thirty-seven.

RENAL FUNCTION FOLLOWING TRAUMA OF THE KIDNEY

A Clinical and Experimental Study

JOHN H. POWERS, M.D., *Cooperstown*

From the Department of Surgery and the Laboratory for Surgical Research of the Mary Imogene Bassett Hospital

The intelligent treatment of patients with traumatic lesions of the kidney depends upon a knowledge of the degree of function which the organ may be expected to regain when healing is complete. There is an occasional case in which the damage is so extensive and the hemorrhage so severe that immediate operation, preceded by transfusion and other supportive measures, is a necessity and a life-saving procedure. The vast majority of patients, however, do not require such radical and heroic treatment. Hemorrhage from the kidney, pain, tenderness, and spasm may persist for days and be followed by rapid and complete restoration of renal function. Clinical evidence and experimental data to support this statement are herewith presented.

Clinical Reports

CASE 1 A young girl, fifteen years of age, was admitted to the Mary Imogene Bassett Hospital following an automobile accident in which she sustained a blow in the right flank and right lumbar region. Pain and frequency of urination occurred, the urine was not grossly bloody.

Examination showed tenderness throughout the right side of the abdomen, most marked in the flank and costovertebral angle. The temperature, pulse rate, respiratory rate, and blood count were normal. A slight trace of albumin was present in the urine, the sediment contained numerous red cells and a few white cells.

The patient was cystoscoped and both ureters were catheterized. A normal amount of urine was obtained from the left kidney and almost none from the right. One c.c. of phenolsulphonphthalein, containing six mg. of the dye, was injected intravenously, the dye appeared on the left side in two and one-half minutes, none was excreted by the right kidney during a period of eighteen minutes. Following the injection of five c.c. of ten per cent sodium iodide into the right renal pelvis, the patient complained of pain in the flank, and the procedure was discontinued. A right pyelogram revealed a

definite abnormality in the contour of the pelvis and upper portion of the ureter, suggesting either the escape of dye into the parenchyma of the kidney or partial obliteration of the calyces and upper ureter, presumably by clots of blood (Fig 1a).

Conservative treatment was advised and she was discharged to the care of her family doctor.

The patient was readmitted to the hospital five days later because of recurrent pain in the right flank and costovertebral angle, with vomiting. She was again cystoscoped and both ureters were catheterized. A temporary obstruction was encountered on the right side, ten cm. above the ureterovesical junction, beyond which the catheter was eventually passed to the pelvis of the kidney. The urine from the right side was turbid and bloody, from the left, clear and straw-colored, cultures of both were negative. The divided function was repeated, the dye appeared on the right side in two and one-half minutes and eighteen per cent was excreted by this kidney during the subsequent fifteen minutes. A retrograde pyelogram revealed a normal renal pelvis (Fig 1b).

Following cystoscopy the patient was free from pain and a few days later she was referred back to her local physician.

CASE 2 A boy, aged fourteen years, was injured in a sliding accident. He received a blow in the left flank, vomited several hours later, and did not void until the following morning when he passed grossly bloody urine. He complained of constant aching pain in the left flank, aggravated by breathing, coughing, and turning in bed.

During the evening he again voided bloody urine and was referred to the hospital, thirty-six hours after the accident.

The abdomen was uniformly distended, exquisitely tender, and spastic over the entire left side and flank, some tenderness and spasm were present on the right side. The epigastrium was tympanitic and the lower abdomen, dull to percussion.

Roentgenogram of the abdomen with the patient sitting up in bed showed no gas beneath the diaphragm, the stomach was dilated. Five hundred c.c. of urine containing

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, April 28, 1936

old blood were obtained by catheterization, much gas and 150 c.c. of fluid were withdrawn from the stomach through a small tube passed through the nose.

The temperature was 100.6° F, pulse rate one hundred, and respiratory rate twenty-eight, the leukocytic count was 18,150 with eighty per cent polymorphonuclear neutrophils, the urine was loaded with red cells. Two days later the hemoglobin was fifty-four per cent and the erythrocytic count was 2,250,000.

Tenderness and spasm in the left flank and left side of the abdomen gradually diminished and the temperature and pulse rate subsided to normal on the tenth day. Grossly bloody urine was passed for a total of three weeks. Intravenous pyelograms showed gross deformity of the left renal

sequent fifteen minutes. Retrograde pyelogram showed marked improvement in the topography of the renal pelvis (Fig. 2b). The urine from the left kidney was normal and culture was sterile.

The examination was repeated again in six weeks. Still further improvement in pelvic topography and renal function was apparent (Fig. 2c). The boy was free from symptoms and no tenderness or mass was present in the flank or costolumbar angle. The urine was normal except for a rare red blood cell in the centrifuged sediment.

Comment. The first patient sustained a moderately severe injury of the right kidney, both the functional and anatomical changes in the kidney were transient and recovery was complete. The second pa-

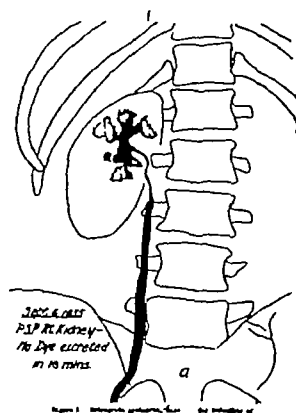
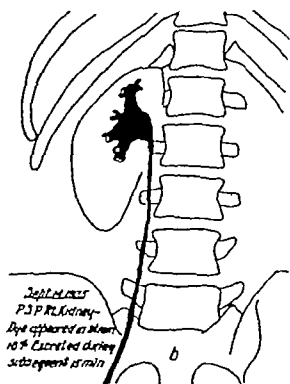


Fig. 1 Retrograde pyelograms, Case 1 (a) Deformity of the renal pelvis and upper portion of the ureter following trauma of moderate severity (b) Prompt return of normal pelvic topography and renal function



pelvis consistent with a traumatic lesion (Fig. 2a). Cystoscopic examination was attempted but the boy was so nervous and apprehensive that the procedure was discontinued.

On the day before his discharge from the hospital (four weeks after the accident) the urine was pale yellow in color, the specific gravity was 1.018, and the reaction, acid, a very slight trace of albumin was present, the sediment contained numerous single and clumped white cells and an occasional red cell per high power field. The P.S.P. test yielded seventy-five per cent in the first hour and five per cent in the second, the N.P.N. was forty-three mg per one hundred c.c. of blood, the hemoglobin was ninety-five per cent and the erythrocytic count was 4,530,000.

Three weeks later the patient was readmitted for cystoscopy which was performed under nitrous oxide and oxygen anesthesia. Phenolsulphonephthalein was injected intravenously, the dye appeared from the left kidney in two and one-quarter minutes and six per cent was excreted during the sub-

sequent fifteen minutes. Retrograde pyelogram showed marked improvement in the topography of the renal pelvis (Fig. 2b). The urine from the left kidney was normal and culture was sterile.

The result of conservative treatment in these two cases, plus the interest aroused by some remarks of Dr. Lowsley before this Section last year prompted the author to undertake the following experimental studies.

Experimental Studies

FIRST SERIES The effect of renal trauma on the function of the single kidney of rabbits previously subjected to unilateral nephrectomy.

Method. Male rabbits weighing between three and three-quarters and four and three-quarters pounds were used. No food or water were given after five o'clock in the afternoon of the day preceding the experiment.

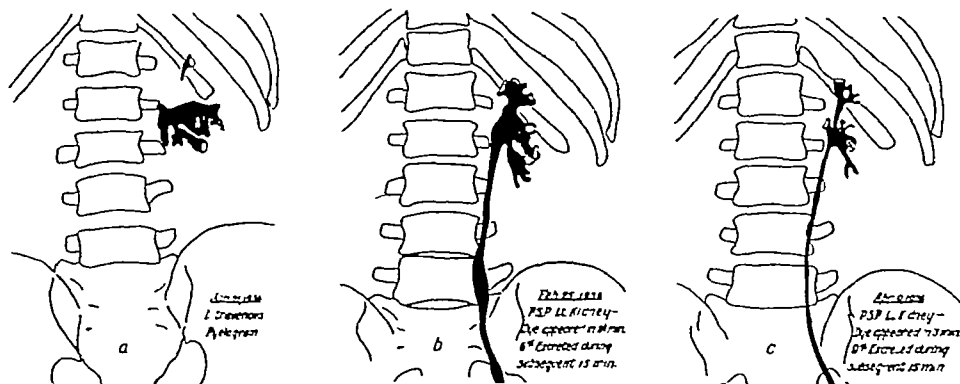


Fig 2. Pyelograms, Case 2 (a) Gross deformity of the renal pelvis following severe trauma, the ureter was not visualized. (b) Retrograde pyelogram 35 days later, the contour of the pelvis was much more normal and the function of the kidney was fair (c) Six weeks later still further improvement in pelvic topography and renal function was apparent.

The normal renal function of the intact animal was first determined as follows

The rabbit was placed in a supine position on the animal board. Blood for determination of the non-protein nitrogen was collected by cardiac puncture. The prepulse was then retracted and a sterile soft rubber catheter, size No 10F, was passed into the bladder. The urine was aspirated with a syringe and put aside for later routine analysis. The bladder was irrigated with tap water until the return was clear, the catheter was clamped and left in place.

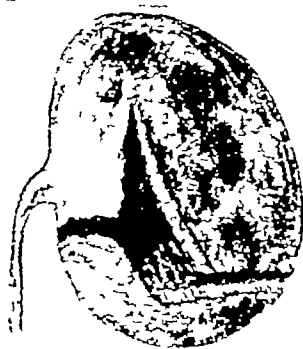
One hundred to 150 c.c. of normal saline solution (depending on the size of the rabbit) were given by gastric tube in order to stimulate a satisfactory flow of urine. One c.c. of phenol-sulphonaphthalein, containing six mg of the dye, was then injected into a marginal vein of the ear and the exact time recorded at the completion of the injection. The bladder was aspirated through the catheter every ten minutes during the first hour and at half-hourly intervals during the second hour. At each aspiration, the bladder was irrigated with a fixed amount of tap water in order to wash out all the dye therein contained. Each specimen was alkalized

with sodium hydroxide, diluted to fifty, one hundred, two hundred, or five hundred c.c., depending upon the depth of color, and the amount of dye was computed by comparison with a series of commercially prepared standard solutions.

These studies were repeated until a normal fractional curve and total output were established for each animal. The routine analysis of the urine and determination of the non-protein nitrogen of the blood were similarly checked.

Intravenous pyelograms with skiodan were attempted on several animals according to the method described by Mengert.¹ Every detail of this technic was closely followed yet the renal pelvis were not visualized once in several attempts. Consequently the procedure was discontinued.

Right nephrectomy was performed with sterile surgical technic under basal anesthesia of urethane supplemented by ether. At intervals varying from one week to one month after the immediate convalescence, all



Anterior aspect

Fig 3 Operative sketch illustrating the effect upon the kidney of severe experimental trauma (Rabbit 66)



Posterior aspect

TABLE I—DETAILED FUNCTIONAL STUDIES FOLLOWING THE EXPERIMENTAL PRODUCTION OF RENAL TRAUMA OF MODERATE SEVERITY (RABBIT 31)

Determination	Color	Reaction	Urinalysis				P.S.P. Test													Total	N	P.N.
			Sp. gr.	Alb.	Sug.	Sediment	Minutes															
							10	20	30	40	50	60	80	120								
Normal Control	V. Cldy. Yel.	Alk.	1.042	Neg.	Neg.	Phosphates	38	31	10	7	4	2	5	4	2	5	99	40				
Normal L. Kid.	Cldy. Yel.	Alk.	1.040	Neg.	Neg.	RIGHT NEPHRECTOMY	40	21	11	6	4	3	3	3	3	91	44					
OPERATIVE CONTUSION OF LEFT KIDNEY																						
1st P. O. Day	Cldy. Red Yel.	Neut.	1.013	V.H.T.	Neg.	R.B.C. W.B.C. E.C.	2	3	2	5	4	1	5	1	5	4	5	22	5	150		
2nd Day	CL Pink. Yel.	Acid	1.008	H.T.	Neg.	R.B.C. W.B.C. E.C.	7	6	4	3	5	3	2	5	6	6	38	160				
3rd Day	CL Amber	Acid	1.012	T	Neg.	R.B.C., W.B.C. E.C.	7	7	4	3	5	3	2	5	8	7	42	129				
4th Day	Cldy. Yel.	Acid	1.002	T	Neg.	H.C. R.B.C. W.B.C. E.C.	2	3	5	3	5	3	3	3	5	9	5	32	5	79		
6th Day	CL Yellow	Neut.	1.007	S.P.T.	Neg.	R.B.C., W.B.C., E.C.	18	9	9	6	5	4	4	13	6	5	70	71				
8th Day	Cldy. Yel.	Alk.	1.027	Neg.	Neg.	W.B.C. E.C.	33	15	11	7	5	3	9	4	87	43						
10th Day	Cldy. Amb.	Acid	1.032	S.P.T.	Neg.	W.B.C. E.C.	33	18	12	7	4	3	7	3	5	87	5	33				
14th Day	Cldy. Yel.	Alk.	1.028	Neg.	Neg.	W.B.C.	32	25	12	7	4	5	6	3	93	5	39					
21st Day	Cldy. Yel.	Alk.	1.030	Neg.	Neg.	Phosphates	40	22	8	7	4	3	6	3	93	36						
28th Day	Cldy. Yel.	Alk.	1.032	Neg.	Neg.	W.B.C. E.C.	40	30	11	4	4	3	7	2	5	101	5	54				

TABLE II—DETAILED STUDIES OF RABBIT 32

Determination	Color	Reaction	Urinalysis				Sediment	P.S.P. Test										Total	N	P
			Sp gr	Alb	Sug	Minutes														
						10		20	30	40	50	60	80	120						
Normal Control	Cldy Amb	Alk.	1.047	Neg	Neg	Phosphates	8	38	21	9	4	5	2	4	2	5	89	39		
Normal L. Kid	Cldy Yel	Alk.	1.016	Neg	Neg	RIGHT NEPHRECTOMY Phosphates	33	18	14	7	4	3	6	3	5	88	5	41		
OPERATIVE CONTUSION OF LEFT KIDNEY																				
1st P. O. Day	Cldy Red. Yel	Acid	1.010	V. H. T.	Neg	R.B.C., W.B.C., E.C.	5	4	3	5	2	5	1	5	1	3	5	150		
2nd Day	Cldy Amb	Acid	1.021	H. T.	Neg	R.B.C., W.B.C., E.C.	7	6	5	6	4	4	2	5	7	7	44	155		
3rd Day	Cldy Yel	Acid	1.018	T	Neg	H. C.	10	7	12	6	4	3	8	5	5	55	5	120		
4th Day	Cldy Yel	Acid	1.020	S. T.	Neg	R.B.C. W.B.C. E.C.	17	7	21	7	5	3	5	9	4	73	5	75		
6th Day	Cldy Yel	Alk.	1.043	Neg	Neg	R.B.C. W.B.C. E.C.	15	35	10	7	6	3	5	8	4	5	89	50		
8th Day	Cldy Amb.	Alk.	1.025	Neg	Neg	R.B.C.	14	25	18	8	5	6	5	4	7	3	5	86	47	
10th Day	Cldy Yel	Alk.	1.019	Neg	Neg	W.B.C.	30	20	16	7	5	3	7	3	91		55			
14th Day	Cldy Yel	Alk.	1.012	S. P. T.	Neg	W.B.C. E.C.	31	20	10	7	6	3	5	7	3	87	5	54		
21st Day	Cldy Yel	Alk.	1.028	Neg	Neg	Phosphates	20	30	20	7	5	3	5	7	3	96		48		
28th Day	Cldy Yel	Alk.	1.027	Neg	Neg	Rare R. B. C. & W. B. C.	18	40	16	7	4	3	5	3	5	96	5	45		
42nd Day	Cldy Yel	Alk.	1.032	Neg	Neg	Phosphates	45	18	10	7	4	3	5	3	6	4	96	5	47	

TABLE III—DETAILED FUNCTIONAL STUDIES FOLLOWING SEVERE CONTUSION AND EXTENSIVE LACERATIONS OF THE SINGLE KIDNEY OF NEPHRECTOMIZED RABBIT 41

Determination	Color	Reac tion	Sp gr	Alb	Sug	Sediment	P S P Test												Total	N	P	N
							Urinalysis						Minutes									
							10	20	30	40	50	60	90	120								
Normal Control	Cldy Yel.	Alk.	1 026	Neg	Neg	Phosphates	12	45	20	7	3	5	3	3	3	96	5	37				
Normal L. Kid	Cldy Yel	Alk.	1 040	Neg	Neg	RIGHT NEPHRECTOMY	36	22	15	7	5	3	5	3	96		40					
						OPERATIVE CONTUSION OF LEFT KIDNEY																
						Loaded c R.B.C.	0	5	0	5	0	2	0	3	0	1	5	0	3	173		
1st P O Day	Bloody	Neut.	1 016	V H T	Pos.	R.B.C. W.B.C., E.C., C	1	0	0	7	0	7	1	0	0	7	0	5	2	240		
2nd Day	Clear Yel	Acid	1 010	H T	Neg																	
3rd Day	Dead																					

TABLE IV—DETAILED FUNCTIONAL STUDIES FOLLOWING SEVERE CONTUSION AND EXTENSIVE LACERATIONS OF ONE KIDNEY OF NORMAL RABBIT 66

												P.S.P Test											
Determination	Color	Reaction	Urinalysis				Sediment	Minutes										Total	N	P	N		
			Sp	gr	Alb	Sug		10	20	30	40	50	60	80	120								
Normal Control	Clear Yel	Acid	1	010	Neg	Neg	Rare W.B.C., E.C.	38	22	14	10	6	3	5	8	3	104	5	44				
OPERATIVE CONTUSION OF LEFT KIDNEY																							
1st P. O. Day	Smoky	Acid	1	016	H.T	Neg	R.B.C. W.B.C. E.C.	40	17	15	8	7	4	7	4	102		43					
2nd Day	Cldy Yel.	Acid	1	015	T	Neg	R.B.C. W.B.C. E.C., G.C.	45	17	11	7	7	3	5	7	3	100	5	34				
4th Day	Cldy Yel.	Neut.	1	005	Neg	Neg	Occ. E.C.	40	20	14	6	5	4	7	3	99		36					
7th Day	Cldy Yel.	Alk.	1	030	Neg	Neg	Occ. W.B.C.	15	30	20	12	8	6	8	5	104		29					
RIGHT NEPHRECTOMY																							
1st P. O. Day	Cldy Yel.	Acid	1	015	S.P.T	Neg	R.B.C. W.B.C.	24	16	12	7	6	3	5	12	4	84	5	37				
2nd Day	Cldy Amb.	Acid	1	025	S.P.T	Neg	Occ. W.B.C.	16	15	12	6	6	4	13	7	79		40					
3rd Day	Cldy Amb.	Acid	1	025	T	Neg	Occ. W.B.C.	30	15	12	10	6	4	14	7	98		51					
4th Day	Cldy Amb.	Acid	1	020	T	Neg	Occ. W.B.C. & G.C.	20	17	10	10	8	4	16	6	91		45					
6th Day	Cldy Amb.	Acid	1	021	S.P.T	Neg	Occ. W.B.C.	25	20	14	12	4	5	5	12	6	5	99	40				

the preoperative studies were repeated and closely checked.

The *left kidney* was then *traumatized*. The organ was exposed retroperitoneally, delivered from the renal fossa, and allowed to lie on the gauze covering the lumbar muscles and skin at the posterior angle of the incision. The anterior surface of the kidney was struck smartly several times with the rounded end of a Wedgewood pestle, about one inch in diameter.

Moderate trauma (four to five blows) caused diffuse subcapsular hemorrhage, capsular tears, and small cortical lacerations on both the anterior and posterior surfaces of the kidney. Severe trauma (eight to nine blows) (Fig 3) frequently produced complete decapsulation, extensive ragged wounds of the parenchyma extending into the renal pelvis, and profuse hemorrhage.

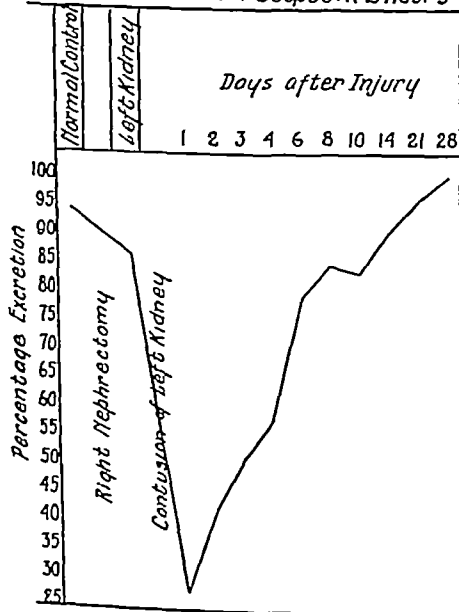
The contused and bleeding organ was replaced and the wound closed in layers with fine silk.

The function of this *single traumatized kidney* was studied daily for four days, again on the sixth, eighth, tenth, and fourteenth postoperative days, at the end of three weeks, and again at the expiration of one month.

Results Six animals were included in this series. Three of them, in which the kidney was subjected to trauma of moderate

CHART I—EFFECT OF RENAL TRAUMA OF MODERATE SEVERITY ON THE ABILITY OF THE KIDNEY TO EXCRETE PHENOLSULFONPHTHALEIN

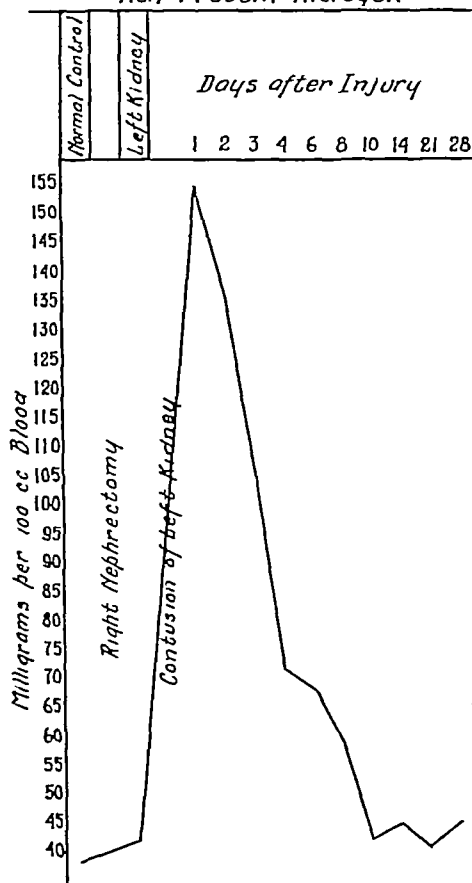
P.S.P. Test — Total Output in 2 Hours



severity, survived. One of these has been sacrificed for pathological study of the renal tissue, the remaining two are alive and in good health. The detailed studies of each of these two rabbits are presented in Tables I and II. The determinations before and after removal of the right kidney represent the average of two or more observations, those after contusion of the left kidney are single determinations. The effect of trauma on the function of the single kidney as measured by the total excretion of phenolsulphonphthalein, the non-protein nitrogen of the blood, and the specific gravity of the urine are presented graphically for the group in Charts I-III. The effect upon the fractional excretion of the dye during the early posttraumatic period in one animal is charted in Chart IV. These indices of renal function all returned to normal levels within a period of fourteen days after the injury.

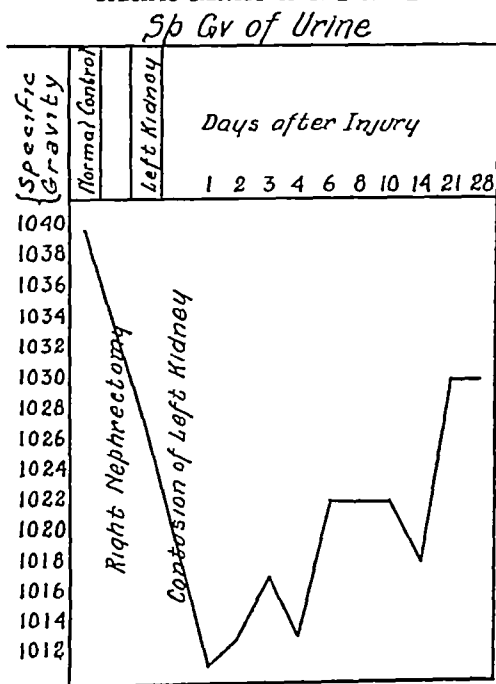
CHART II—TEMPORARY NITROGENOUS RETENTION FOLLOWING RENAL TRAUMA

Non-Protein Nitrogen



The three rabbits whose single kidney was severely traumatized died on the second or third day after contusion. The urine was grossly bloody, the specific gravity was low, heavy traces of albumin were present, the output was diminished, and in one instance complete anuria occurred. Either none or minimal amounts of phenolsulphonphthalein were excreted and the non-protein nitrogen of the blood rose rapidly to high levels. The detailed studies of one such animal are presented in Table III.

CHART III—EFFECT OF RENAL TRAUMA ON SPECIFIC GRAVITY OF THE URINE



Conclusion Renal trauma of moderate severity impairs the ability of the kidney to excrete urine of normal concentration, reduces the early elimination of phenolsulphonphthalein, decreases the total excretion of the dye, and causes an abrupt and conspicuous rise in the non-protein nitrogen of the blood. Albumin, red cells, white cells, and casts of various types are found in the urine. The restoration of normal renal function is prompt and complete.

Sudden, severe, and extensive trauma is incompatible with life if the opposite kidney has been removed.

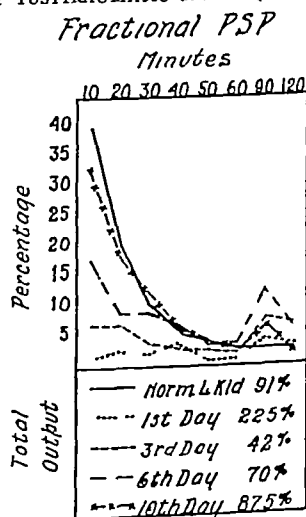
The fatal outcome in the three nephrectomized rabbits whose single kidney was severely traumatized led to the further study of the effect of extensive unilateral renal injury in rabbits with both kidneys intact.

After the immediate posttraumatic period had been safely passed the undamaged kidney was removed, leaving the animal only the severely injured organ for the subsequent maintenance of renal activity.

SECOND SERIES The effect of severe unilateral renal trauma on the renal function of normal rabbits. Subsequent removal of the untraumatized kidney with complete functional recovery of the injured organ.

Method The preliminary studies were similar to those in the first series. The left kidney was then seriously traumatized by eight or nine blows with the pestle. All the studies were repeated on the first, second,

CHART IV—ALTERATIONS IN FRACTIONAL EXCRETION OF PHENOLSULPHONPHTHALEIN DURING EARLY POSTTRAUMATIC PERIOD (RABBIT 31)



fourth, and seventh days after injury. On the eighth day the normal right kidney was removed. The function of the remaining damaged organ was determined at appropriate intervals thereafter.

Results This series of experiments has not yet been completed so that the results cannot be presented as composite curves for the whole group. The detailed studies of one animal are tabulated in Table IV. From a study of this it is apparent that severe trauma of one kidney caused no significant change in the excretion of phenolsulphonphthalein, in the non-protein nitrogen of the blood, or in the specific gravity of the urine. Following removal of the undamaged organ, the impairment of renal function was transient and slight.

Conclusion If severe injury is inflicted

upon one kidney of a normal rabbit, the renal function will be maintained quite satisfactorily by the opposite kidney, with no significant impairment during the immediate convalescent period. If this normal organ is then removed, the traumatized kidney will recover sufficient function to continue the maintenance of renal activity at a normal level thereafter.

The experimental results suggest that severe unilateral renal trauma in man may be treated conservatively (unless immediate operation be necessary to save life from hemorrhage) with the reasonable expectation of good functional recovery in the injured organ.

Summary

Two clinical cases of renal trauma, one moderate and one severe, have been reported. The ability of the injured kidney to excrete phenolsulphonaphthalein and the pyelographic appearance of the renal pelvis returned promptly to normal in the first case. In the second instance the recovery was less rapid but equally satisfactory.

Experimental observations have been

submitted which demonstrate the prompt return of normal function following renal trauma of moderate severity in rabbits with only one kidney. Severe and extensive injury after unilateral nephrectomy is followed by death.

Severe trauma of one kidney, if the opposite organ is intact, produces no significant change in total renal function, measured by the fractional and total excretion of phenolsulphonaphthalein and the non-protein nitrogen of the blood. If the normal kidney is removed after the critical, immediate posttraumatic period is over, the injured organ will recover sufficient function to maintain renal activity at a normal level.

The clinical reports and experimental data suggest that the majority of patients with unilateral renal trauma may be treated conservatively with the expectation that the injured kidney will recover sufficient function to be a useful and serviceable organ.

Reference

1 Mengert, W. F. *Journal of Urology*, 20: 721, 1933.

THE PUBLIC HEALTH CONVENTION IN NEW ORLEANS

More than one hundred separate scientific sessions, with 300 speakers, are listed in the program of the sixty-fifth annual meeting of the American Public Health Association in New Orleans, October 20-23. There are highly specialized programs designed to solve current problems in the fields of administration, nursing, school health work, health education, sanitary engineering, vital statistics, laboratory practice, child hygiene, industrial hygiene, epidemiology. There are programs covering over-lapping interests which involve several groups of specialists who come together in joint meetings for common discussion. There are programs broad enough in scope and of sufficient importance to warrant the attendance of the entire Association in general sessions.

Advances in Public Health is one such General Session. Other General Sessions will deal with diphtheria immunization, mental hygiene, mosquito-borne diseases, and professional education.

A symposium on syphilis is featured. Administrative, epidemiological and laboratory aspects will be presented respectively by Dr. J. N. Baker, State Health Commissioner of Alabama, Dr. George H. Ramsey, Director of the Division of Communicable Diseases, New York State Department of

Health, and Dr. A. H. Sanford of the Mayo Clinic. Discussion will be opened by Dr. Thomas Parran, Surgeon General of the United States Public Health Service.

Other symposia include industrial sanitation, milk and dairy products, infant and maternal mortality, enteric fevers, nutritional problems, registration of births and deaths, care of communicable disease in the home, food poisoning, sanitation of eating utensils, intestinal parasites, school health education, school nursing, business aspects of the health department, and publicity.

More than 2000 public health workers are expected to attend from every state in the Union, from Canada, Cuba, and Mexico.

On the invitation of the Cuban Government and Florida health authorities, the Association will sponsor an all-expense post-convention tour to Havana via Florida by train, motor and steamer. Delegates are invited to join the tour.

The American Public Health Association offers a copy of the program which includes hotel and railroad information, a summary of the post-convention tour and other details concerning the Annual Meeting to those who write to the Association's office, 50 West 50 Street, New York City.

MALIGNANT MELANOTIC TUMORS IN THE NEGRO

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In spite of the references in the literature to tumors of melanotic origin, little has been said regarding the racial incidence of this condition, and only a very few instances have been reported in which negroes have suffered from malignant melanomas.

Sequeria and Vint¹ state that views on the apparent rarity of malignancy in the African in his native environment must be modified. During a period of eight years 2228 specimens of native tissues were examined at the Native Hospital in Nairobi, and of these 482 were malignant. Of the 482 malignant tumors recognized during this period, 184 were cancers of the skin and adjacent mucus membranes, and fifty-two of these were melanotic in origin. Both sexes were equally represented, and all were adults. The foot was the commonest site, and the majority of the tumors occurred on the plantar surface.

Ewing² mentions the occurrence of melanoma in the negro and suggests the possibility that many cases are overlooked on account of the surrounding dark skin.

Wieting and Hamdi in Constantinople, among a series of 10,000 deeply pigmented oriental people and negroes, including 2,000 patients suffering from ophthalmic disease, recall only six melanotic tumors, two arising from the soles of the feet, one from the gall-bladder, and three from the eye. None of these six patients were very deeply pigmented.

In West African natives Adler and Cummings³ found few cases of malignant neoplasms, although one of the eight cases mentioned, was a melanotic tumor of the foot, with metastases to the inguinal glands.

In the United States, Hazen⁴ reported a case of melanotic tumor, with metastases to the inguinal glands and lungs in a negro, forty-four years of age, following an injury to a mole on the sole of his foot six months previously. Sutton and Mallia⁵ carefully studied a malignant melanotic tumor arising in the toe of a negress, seventy-eight years of age, fol-

lowing an injury which had occurred nine years previously. She died of widespread general metastases. They discuss the rarity of this condition and refer to six additional cases.

Baurer reports two cases, the first a negress, twenty-three years of age, with a history of an injury to her thumb a year previously, and the second a deeply pigmented male, forty years of age, in which the toe was first involved with secondary involvement of the inguinal glands and lungs.

It is difficult to offer any satisfactory explanation as to why malignant pigmented tumors or even benign nevi should be rare in tissue which is normally the site of large amounts of pigment. Matas believes that pigment production is a normal function of the negro skin and that it is under a well-developed physiological control, while in the white race, pigment is limited to a few scattered areas, and its physiological control is poorly developed.



Fig 1 Metastatic tumors in right arm

W H, colored, was admitted to the Willard State Hospital on October 27, 1919, where a diagnosis of manic depressive psychosis of the manic type was made, and died there after a continuous residence on June 29, 1935. The condition which resulted in his death, began in October 1934, as closely as can be determined. At that time, he developed a gangrenous condition of the index finger of his right hand, and an amputation was performed. At the time, a deeply pigmented tumor mass was noticed on the dorsal surface of the hand, just posterior to the site of the amputation. Very shortly afterwards, a similar growth appeared on the roof of his mouth which had attained the size of a walnut, it was removed January 25, 1935. The specimen was examined in the State Laboratory, where a

diagnosis of melanotic sarcoma was made. Within the next three months, many metastatic tumor masses appeared in the skin, more particularly of the right arm and shoulder (Fig 1). During the same period, many neurological signs developed, indicating involvement of the nervous system. He also developed symptoms relative to his respiratory system.

An autopsy was performed which showed

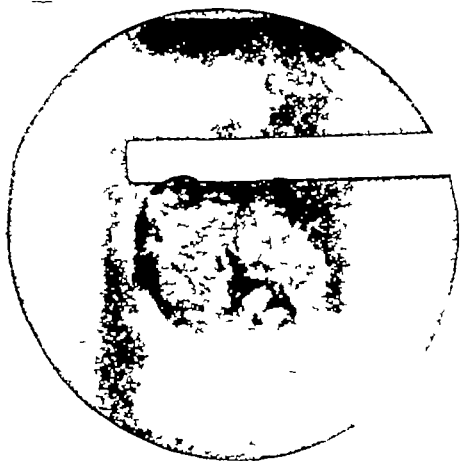


Fig 2 Axillary lymph gland



Fig 3 Metastasis in right lung

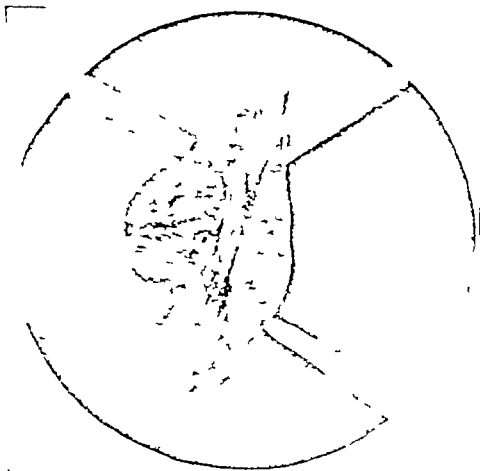


Fig 4 Section of liver showing large metastatic nodule

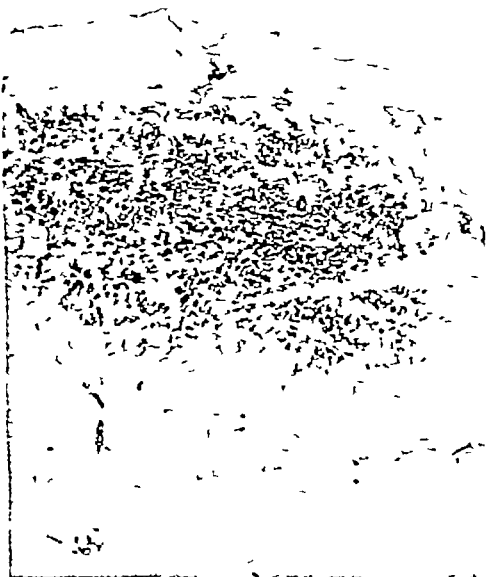


Fig 5 Low power microphotograph of section of cerebral cortex showing punctate involvement with melanotic tumor

marked metastatic involvement of the brain, liver, lungs, and spleen as well as numerous nodules on the body surface. Some of these masses were very small while others had attained the size of a lemon. The axillary

lymph glands were extensively involved. Fig 2 shows one of these. The tumors were all deeply pigmented, and many of them contained large amounts of dark colored gelatinous material. The lungs (Fig 3) showed many deeply pigmented tumor masses of varying size, as did the liver (Fig 4 and Fig 7) and kidneys.

The cerebral cortex (Fig 5 and 6)

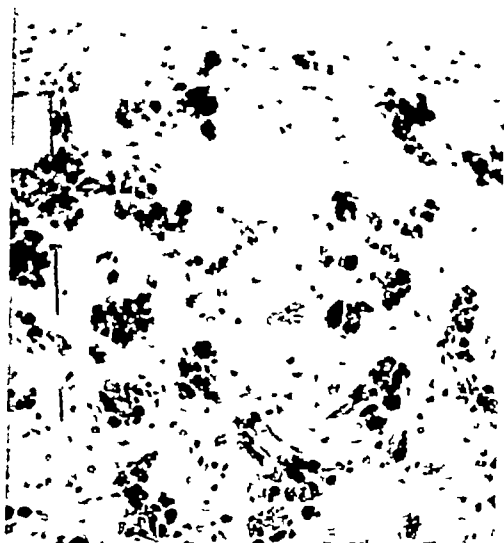


Fig 6 High power microphotograph of Fig 5

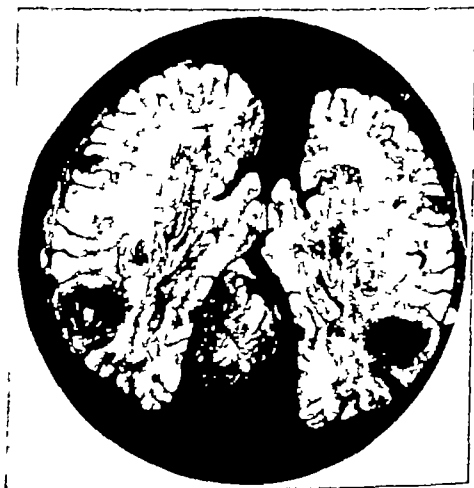


Fig 8 Left cerebral hemisphere showing large metastasis near the posterior end of the lateral ventricle

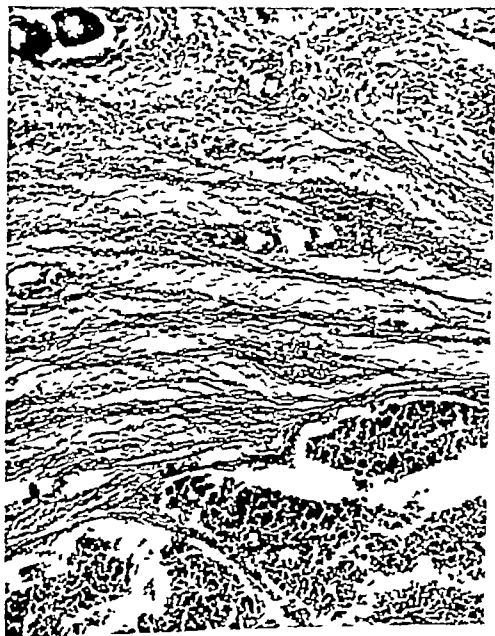


Fig 7 Microphotograph of melanotic nodule in liver showing almost complete absence of liver tissue

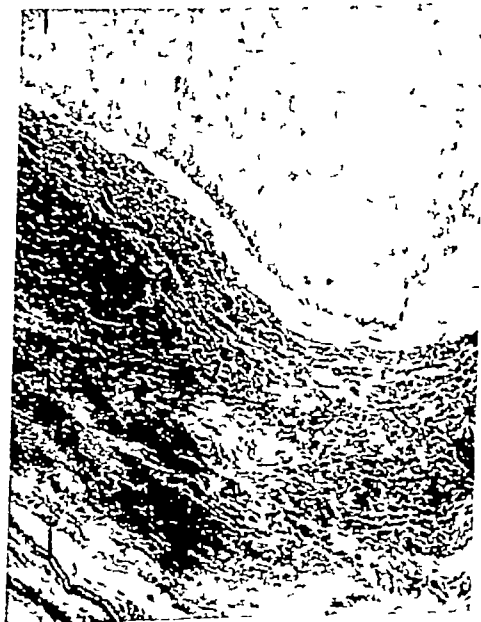


Fig 9 Microphotograph of wall of a blood vessel adjacent to a tumor nodule showing infiltration of blood vessel wall with melanin

showed many masses varying in size from a pinhead to one cm. in diameter. There was an area of pigmentation and softening near the posterior portion of the left lateral ventricle (Fig. 8). Just anterior to the fissure of Rolando, on the right cerebral hemisphere, was a nodule about $1\frac{1}{2}$ cm. in diameter as well as innumerable smaller masses.

In general the same type of pathology was found throughout all the tissues showing tumor involvement. There was a variable amount of melanin pigment in all the masses examined microscopically, although some of the cells showed little or no pigmentation. One specimen showed invasion of the walls of a blood vessel (Fig. 9) by tumor cells which would indicate the possibility of spread through the vascular tree.

Comparatively few cases of melanotic malignancy in negroes have been reported. In most cases, trauma has a definite bearing

on the development and spread of the tumor. In this case, the amputation, no doubt, had some effect, increasing the spread of the melanotic tumor masses with resulting metastasis in practically every organ in the body. Metastases occur very rapidly, with death resulting in a comparatively short time.

I wish to express my appreciation to the Staff of the Psychiatric Institute, and to the Laboratory of the State Department of Health for their help in making the diagnosis and preparing photographs of the pathological specimens.

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BETWEEN MENTAL HEALTH AND MENTAL DISEASE

B. LIBER, M.D., D.P.H., New York City

Editorial Note: Under this title will appear short summaries of "transition cases" from the service of this author in the New York Polyclinic Medical School and Hospital. The descriptions are not complete clinical studies, but will accentuate situations from the point of view of individual mental hygiene such as crop up in the every day practice of medicine.

Blight

He makes his own diagnosis and gives the etiology too.

"I am depressed. I don't care about anything. Nothing interests me. I see people around me who struggle and fight, who are full of ambition, who run hither and thither. I understand them, but I don't envy them. I feel I should not be as I am. I am only thirty and, as you see, I am not sick, that is I am physically well—tall, broad shouldered. I am not working and am not looking for work, although I am skilled. Satisfied to live with my old mother who is a widow and has a small pension. She ought to chase me out of the house, but she does not. She owns the house, by the way, and there are lots of things to fix in it and I can do it, but I keep on postponing it and never get around to do anything. The house needs painting, but it looks to me like an immense job that I don't want to tackle it, although it's nothing. Sometimes I am much better. Then I am alive, like one of those hibernating animals when they awake in spring. I read, I work, I fix mother's car, I go to see a show or a friend. I go back to a girl I know, but who is otherwise indifferent to me. There is fun in everything, watching the waves at the beach in moonlight, looking at the crowds in the street,

driving a car. But that doesn't last long. For instance, just now I wouldn't touch the auto. I am afraid. You see, it's all due to my father. Yes, it's his fault. He crushed me. He was awfully severe and had a bad temper. We all crawled into our corners when he came home. He used bad words against my mother and threw the dishes around or broke the chairs. If we dared to move we were beaten up. When I was fifteen I was already taller than he and something stirred in me. But my mother called me into another room and said, 'No nonsense, we need peace, if I can stand it you can too and what would you do, have two crazy people in here instead of one?' And so I laid down low and let the storm pass. Evenings, when friends and schoolmates had a good time, I was not supposed to leave my desk. I had to study hard, to make good. And my head was filled with funny ideas about life, things that I see now in a different light, but I cannot help it any more. It's too late. I was a little improved after my father's death, but the whole condition came back later. In one of my good spells I loved a girl. I mean I loved her really and she loved me. But as soon as we had sexual relations the old morality with which my parents had

stuffed me returned. The girl couldn't be good, I said to myself, if she gave in—and I left her. She was the saddest thing on earth, but within a year she got married and I lost her. In my livelier moments I still care for her and I know she is still fond of me. But what's the use? My other sisters and brothers were smarter than I. They couldn't stand my father's iron rule. They all ran away from him and for a long time

he didn't know where they had gone or what they were doing. Each time this happened he fumed and snorted like a wild beast and he was wilder to those remaining and especially to my mother. But I stayed and this is the result."

Several talks proved that his case was not desperate and that a great improvement was possible.

Light and Shadow

Woman of forty-seven, two children, youngest fifteen

For three years "one happy day followed by one unhappy day—literally a day and a day, but more shadow than light," she says.

Wishes to die, to commit suicide, but never tried.

"Some day I'll fall down from a high building, or I'll get run over, or I'll get drowned. I keep on asking myself whether it's worth to carry on."

"Yes, I did plan to get rid of life. As a matter of fact I'm making some plans all the time. I think of death only."

Speaks well and much and seems to enjoy her unhappiness. Indeed, allows no one else to say anything, as she never stops.

"Has no enemies, friends only." Lives at home with her family.

Does her work—but on the bad days with great effort.

Although her husband is "nice to her,"

she is not satisfied with him—and there lies the cause of her trouble. While she does not blame him for her condition, she does not praise him either and criticizes him severely in a general way.

Physically normal. Sex intercourse normal and satisfactory. Menses still regular and unchanged. Family history is negative.

Patient is sociable when feeling well, has "no dreams."

It is a case of mental depression, of pessimism, which, if the situation will not become worse, will remain as it is. A transition case, where conversations can help much. The cause must be revealed to her and she must be shown that, if she chooses to continue to live with her husband, she should accept her plight. The real remedy lies in some interest and activity which would take her often away from her household interests.

611 W 158 St

A WET BLANKET FOR THE COLD SHOWER

Those hardy souls who seek to demonstrate their intrepidity by taking a cold shower in the morning before rushing off to work, place their systems under "a tremendous strain" which in some cases may lead to great harm and even premature death, according to a warning sounded at the fifteenth annual convention of the American Congress of Physical Therapy.

Dr Hans J Behrend of the Hospital for Joint Diseases told the 1,000 doctors at the gathering at the Waldorf-Astoria Hotel that he was opposed to any one, even those in robust health, taking a cold shower at any time. He prescribed the lukewarm shower, with the water temperature about the same as that of the body, as the ideal bath. The best time to bathe, he added, was just before retiring at night.

"Those in robust health and with good circulation can overcome the strain engendered by the cold shower," Dr Behrend said, "but those less fortunate, particularly weak, anemic and older people, may suffer serious damages as a result of it. Colds, feebleness and fatigue are some of the harmful effects of the cold shower habit."

"In the case of the person in perfect health, the cold shower tends to stimulate the muscles and to refresh a person suffering from fatigue. Although I would not advise any one to take a cold shower, those who have made a habit of it may lessen the possible strain on themselves by regulating the flow of water so that the shower shifts from lukewarm to hot, or from hot to cold, slowly and gradually."

Dr Eliot Bishop of the Kings County Medical Society says that something must be done to reduce the cost of bringing babies into the world. Unless that is brought about,

he believes, the cost will have to be met by loans advanced by the State or parents will wait till they are middle aged before they can afford to have children.

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EDITORIALS

Anent the Quality of Medical Care

Professor Henry Sigerist once said that the society it serves influences the type and character of medical care that society receives. Sigerist has since become one of the proponents of socialized medicine. What he said, nevertheless, based as it was on studies of the trends in medical practice during the changing epochs of history, is essentially true.

If the strong individualists who compose our great middle class are passing, as Louis Corey believes, then this country, instead of consisting of individual farmers, store-keepers, manufacturers et al,—this class will be replaced by a great army of job-holders. The liberal professions of law and medicine, too, having almost no private clientele upon which to draw—because there would be so few independent persons in the society of the allegedly ensuing epoch—will perforce have to conform to the pattern of the society about them, and they also would become part of the great job-holding public. Only in this way can one conceive that the thetic statement of Sigerist can find substantiation.

Naturally it would follow, were Corey's opinion to come true—an opinion with which we do not find ourselves in accord—that we would have a less vital, a less virile, and a less potent middle class. Likewise we should have medical men of

lesser caliber and poorer type. The job-hunting and job-holding groups are nowhere conceded the equal of those who take life as they find it and carve out for themselves from their environment, and from the circumstances it presents, careers and achievements and worldly goods to better their living standards.

During the various phases of historical times, if we trace the trend of youth toward occupations we find that when interesting and adventurous careers were closed to most walks of life except in the Church, brilliant youth gravitated to the Church. When adventure and army life held lure under the Napoleonic influence, the brightest and best sought a Marshal's baton in an army career. When, at the end of the nineteenth century, industrial development offered fame and fortune as rewards for initiative and courage to those who essayed these careers, intellectually adventurous youth gravitated to these fields. This period also saw the rapid and astounding developments in medicine, because here too, individualistic endeavor brought adequate rewards, and the medical career was both interesting and attractive. The same brilliant types were attracted to medicine as to the industrial fields of endeavor. In all these activities, men were their own masters. They were

much encouraged by, but were not controlled by government agencies. In education the stress was on the development of the individual doctor, and none on anything else. Medical schools and colleges could successfully raise their standards of requirements for admission, and of curricula. To these schools came some of the best among our youth, and the institutions of learning could exercise their power of selecting the best of these. From this the public benefited by receiving a better grade of medical service.

The country's educators should ponder on the problem that will confront them if the efforts of the protagonists of compulsory health insurance have their way, and the proposed form of delivering medical care to our people is thoughtlessly adopted.

What type of youth would be attracted to a medical career? After a difficult medical course of four years, and the necessary preparatory one, then the arduous postgraduate internship—to be qualified for what? A job, with a fixed income, with a definite number of assigned patients who, to follow the custom set in England, are not thoroughly examined even if there were time allowed to do it, fixed hours of work, perhaps a paid vacation, and at the end—a pension. A job-holder's career! A government employee with all that this implies!

Obviously, will it not be quite a different type of man than those who have won high renown and have given American medicine the high place it holds today?

Will not the stress in medical education also have to change? Will it not be necessary to train American medical officials rather than American doctors? We see a similar change in a trend in the field of nursing. Formerly all student nurses were educated alike, now there is a distinct change in stress toward educating nursing administrators. Those who will actually handle the sick are, apparently, slated to have less arduous curricula to cover. Since the financial income will be greater among the medical

administrators of the system than among those of the rank and file who handle the sick, medical education will soon change to meet the demand of those who will seek careers, not as physicians to the sick, but as part of the controlling bureaucracy set apart and over the physicians. The colleges will give two types of education to meet the changed conditions. Reasoned our further, it will become necessary to lower standards (as was done in Russia) to attract sufficient numbers to meet the needs of the so-called lower branches of the medical system. Lower standards, reduced entrance requirements, and a totally different type of individual will be found taking up a medical career. And all this is proposed "for the betterment of mankind"!

We, who are opposed to compulsory health insurance, call to the attention of our educators these thoughts, for we are deeply concerned with the *quality* of medical care our community will receive. For it we desire only the best quality of medical care obtainable, delivered by a man or woman of the highest type.

The medical educators of our country have here a responsibility that they must continue to carry. In the discussions of the pros and cons of compulsory health insurance, obviously it is not an economic problem nor is it wholly a sociological question. It is a problem with which the educators of our youth are also concerned. Medical education must be planned to the end that we may maintain what we have laboriously won—a lower death rate, and a lower morbidity rate than any country where compulsory health insurance is in force, and a level of preventive medicine not equalled in any of the countries of Europe whose example we are so blithely being urged to follow.

Bonanza or Bubble?

"Gold Mine or Gold Brick"? This question has inspired the American Institute for Economic Research to a study of the influence of the Social Security Act

on the average American citizen. From the point of view of those who will actually receive benefits, monies paid in may yield "a profit of 600% on a government guaranteed investment * * * Any ordinary investment which promised such great returns would be regarded with suspicion by every experienced investor." To counterbalance this, " * * of course, many individuals may be forced to make sacrifices without being so handsomely rewarded * * *"

Addressing the average citizen, the Institute for Economic Research warns, "The Social Security taxes will leave you less to spend for the things you need and want." Under it, "you may have to pay, not one, but several thousand dollars. Part of this will be taken from every paycheck which you will receive for many years to come. The remainder you will pay in the form of higher prices for food, clothing, car, shoes, and everything else you buy * * * It may be that you will pay a portion of the cost in the form of higher prices, but will never get one cent's worth of benefit from the Act."

Without impugning the motives or aims of the Social Security Act in any way, grave doubts have been expressed both as to its constitutionality and its ability to achieve its purpose. To the medical profession all this is particularly interesting as a foretaste of what may be expected if compulsory health insurance is added to existing legislation.

The picture of unrequited payments which the Institute for Economic Research paints in connection with unemployment and old age insurance is equally true for compulsory health insurance. The inevitable rise in taxes and living costs engendered by the present law would be augmented by obligatory prepayment for sickness. Compulsory health insurance would intensify and multiply the bureaucratic evils inherent in the existing social security legislation.

The welfare workers and politicians who put through the general Social Se-

curity Act are already complaining that the promised benefits are not complete without health insurance. They will attempt to bring the latter to pass even though the constitutionality of the former is still in doubt. It must be remembered that, " * * until the Supreme Court speaks, the Act will be the law of the land, and taxes will be imposed upon employer and employee, even if pensions and unemployment benefits are never paid." Ordinary common sense dictates that any decision on compulsory health insurance be postponed until the constitutional status of the existing laws is defined and their efficacy observed.

Well-Founded Confidence

Writing for the September issue of *Medical Economics*, Dr. Floyd S. Winslow, President of the Medical Society of the State of New York, defends popular judgment on non-scientific phases of professional practice. Technical questions are no fit gauge of lay opinion and should not be submitted to it. In many of the social and economic aspects of medical care, however, the public has a stake second only to that of the physician, and it is increasingly assuming the right to help settle the problems with which it is directly or indirectly concerned.

The profession should welcome and encourage intelligent popular participation in the solution of the economic and sociological problems associated with medical care. Far from constituting a danger or encumbrance, informed public opinion is the best ally the doctor can have. It is up to physicians, acting individually as well as in organized groups, to see that the laity is fully and accurately informed on matters in which it has a justifiable interest.

The blunders of democracy have given rise, in some minds, to an unwarranted contempt for popular discretion. Compared to the vices of many monarchies and most dictatorships, the errors of democratic judgment appear slight in-

deed and relatively easy to overcome. Naturally full and free education is indispensable to the formulation of sound opinions, and in subjects related to medical practice the physician should recognize his obligation to furnish correct, complete information in terms comprehensible to his listeners.

The purchaser of medical care, like the buyer of any other service or commodity, holds definite views on his purchase. While a layman is rarely able to appraise professional judgment or skill, quoting Dr Winslow, " * * * there have arisen a number of questions related to the work of our profession, which are not essentially scientific or therapeutic, and on which a lay person with a trained mind may be equipped to form a sound opinion * * * Now I am free to say that I think there are certain exceptions to the rule that the public may be trusted. But there are even more serious objections to assuming that they cannot be * * * "

The profession has its choice between enlisting lay support by a frank exposition of the non-scientific ramifications of medicine or alienating public opinion by a hierarchic refusal to discuss any aspect of practice with the laity. In the recent nation-wide high school debates on compulsory health insurance popular judgment was vindicated by the strong case built up for the negative in most of the contests. You can't fool all of the people all of the time—and it is the doctor's job to see that the public has authentic information from which to formulate sound opinions on medical questions.

The New York Academy of Medicine's Graduate Fortnight

Nine years ago, the New York Academy of Medicine inaugurated the first of its series of organized lectures and clinics devoted to the study of certain phases of medical problems. The purpose of this yearly graduate fortnight is to present to the profession the accumulated knowledge on a given topic, prepared

and delivered by authorities in the respective fields of medicine.

This year's Fortnight, which commences on October 19, deals with trauma, occupational diseases, and hazards. Every conceivable aspect of these topics will be covered in the evening lectures at the Academy. The afternoons are to be devoted to clinics and demonstrations of traumatic medicine and surgery. The profession is invited to attend, and detailed information can be obtained by writing to the New York Academy of Medicine. In view of the popularity of the subject to be presented, a large attendance is expected and it is urged that the general admission ticket be sent for well in advance.

Acromegaly and Follicular Hormone

The role of the endocrines in the bodily functions is an important one. A great deal of knowledge has been accumulated during the past few years to add greater weight to the earlier assumptions of the part played by the glands of internal secretion. Not only have the specific physiological functions been established to a great extent, but the information gleaned has been put to practical therapeutic use.

In addition to the individual activity of the various hormones it has been known that their action is more or less interdependent. Some of the hormones possess activating properties on the secretions of other glands while some are distinctly inhibitory. It is in this connection that Kirklin and Wilder¹ studied clinically the effect of follicular hormone on cases of acromegaly. In eight cases wherein this hormone was administered favorable results were obtained as far as the amelioration of symptoms was concerned. The severe headaches were relieved. The visual fields improved, in some instances returning to within normal limits. Some patients noted a decrease in the puffiness of the soft parts and a

¹ Kirklin and Wilder. *Proc. Staff Meet. Mayo Clinic*, 11:121, 1936.

decrease in the amount of perspiration, particularly at night

The investigators have undertaken this study to determine whether the follicular hormone exerts an inhibitory action on the somatotrophic activity of the pituitary gland in cases of acromegaly. They themselves do not intend their report to be interpreted as outlining a new type of therapy for acromegaly. Their clinical results, however, should tend to stimulate further investigation utilizing this type of treatment.

CURRENT COMMENT

"I SOMETIMES QUESTION whether the present tendency to depend so much on memorizing knowledge gives a sound basis of education for the future. Knowledge is static, wisdom is active and moves knowledge making it effective. As I think back on my own classmates in college, I am impressed with the fact that many of them who had fine memories and stood at the heads of their classes in some way in the after years missed acquiring wisdom and did not come up to our expectations. Some students can fill their minds with any given subject, book, chapter, and page, and can regurgitate this knowledge at examination and thereby win class leadership. Such memorizing of knowledge has not necessarily relation to wisdom. After all, the best the college can do is to give the students breadth of knowledge, not necessarily depth of knowledge."—Among the statements made at the 1936 graduation of Notre Dame University by Dr. W. J. Mayo, and quoted in the September 1936 *Supplement* to the *Saint Louis County Medical Society Bulletin*.

"IT WILL BE A SORRY VICTORY for the public if it is ever misled into action that will compel physicians and medical societies to turn aside from their tested traditions and devote their main attention to economic problems. There has been far greater progress in preventive medicine in this country than in any nation in which medical care has been dominated by political and economic interests"—R. G. Leland, M.D.

"IN THIS DAY OF MODERN witch-burning, when freedom of thought has been exiled from many lands which were once its home, it is the part of Harvard and America to stand for the freedom of the human mind and to carry the torch of truth

The truth is great and will prevail. For centuries that grand old saying has been a rock of support for persecuted men.

But it depends on men's tolerance, self-restraint and devotion to freedom, not only for themselves but also for others, whether the truth will prevail through free research, free discussion, and the free intercourse of civilized men, or will prevail only after suppression and suffering—when none cares whether it prevails or not"—President Roosevelt, speaking at the Harvard Tercentenary at Cambridge.

"WE ARE TO BLAME! Only the Doctor of Medicine himself knows what constitutes proper care. Unless the Doctor of Medicine is willing to disseminate this knowledge to laymen, either in groups or to them as his individual patients, the public cannot be expected to know * * * He has a message for the people. A message that must be given. This message is not simply one of a medical nature. Today it goes far beyond that. He must protect a commonwealth against insidious legislation that tends to break down a protection to the health and welfare of the people—a protection that has taken centuries to create. * * *

The greatest task before Medicine today is the proper dissemination of knowledge, dissemination of the truth to the public * * * As a duty to the people, the doctor should learn to talk about his science. Unless he does this the public cannot be blamed for not understanding * * * To successfully protect the public against the countless "isms" that now confuse it, takes a united voice of Doctors of Medicine. A voice that will be heard not only before large gatherings but in every possible individual contact with the public."—The above quotations are taken from an excellent editorial in the *Los Angeles Medical Society Bulletin*.

"* * * AN UNDERSTANDING of medical economics would not precipitate a tyro into a flourishing practice immediately upon graduation. It would, however, enable him to recognize and evaluate forces that retard his economic progress and to weigh doctrines urged upon him in the light of past experience and ultimate consequences. Above all it would teach him the value of organized activity in which the individual is a militant participant instead of an inert part."—*Saint Louis Medical Society Bulletin*.

"IF WE ARE TO MAKE cheapness the hallmark of medicine, then would we return our people to the dark ages when life itself was cheap, for no less than life itself is involved in medical service. As you so well know,

the common cold within hours can be pneumonia, the common fracture can result in a disability for life reducing earnings by a half, diabetes can be lived with or, improperly treated, a cause of too early death, improper diagnosis can mean a life from cancer or prolonged periods of invalidism from any of many causes. When you abandon present standards for fixed sum payments, you enter upon a principle in the operation of which the physician profits most from performing the minimum service—a practice wherein the man who pays hard-earned money for months and years may find the institution that took his payments non-existent when he calls upon it in his time of need”—J G Crownhart in the *Milwaukee Medical Times*

“THE PUBLIC IS A very incompetent judge of your skill and knowledge, but it gives its confidence most readily to those who stand well with their professional brethren, whom they call upon when they themselves or their families are sick, whom they choose to honorable offices, whose writings and teachings they hold in esteem. A man may be much valued by the profession and yet have defects which prevent his becoming a favorite practitioner, but no popularity can be depended upon as permanent which is not sanctioned by the judgment of professional experts, and with these you will always stand on your substantial merits”—The *Saint Louis County Medical Society Bulletin* has chosen the above from the writings of Oliver Wendell Holmes for its issue of September 4, 1936

THE GENEVA ZONE

It should always be a matter of much interest to the entire Medical Profession when one of its members distinguishes himself by a valuable contribution to the sum total of human happiness and welfare, even though, or perhaps especially, when it is of a non-medical character. When such is the case the contribution takes on somewhat the nature of the soldier's bravery “outside the line of duty” for which special awards exist.

A case in point is the service of a French physician Dr G Este' de Metz, who has organized and is laboring at expanding a most laudable humanitarian movement. This is the “Geneva Zone” idea. In substance, the plan is to establish all over the world in properly chosen locations, distinctly neutral areas, where in time of, or in the event of,

war, the aged, the infirm, children, pregnant mothers and others who because of physical handicaps are entitled to civilization's special consideration, may be completely protected from the inhuman ravages of war. These areas or zones are to be administered by properly qualified persons, entirely free of political, religious or other potentially combatant control.

If the idea, even to that extent, spreads and is successful, says *American Medicine*, it is a great humanitarian movement entitled to respect and support from all right-minded people. If, eventually, it transcends the bounds already set for it, it may lead the way to real world peace—to making the entire world an enormous Geneva Zone where all may be protected from the brutal and selfish aims of war.

TOO INDIVIDUALISTIC!

A criticism heard against the medical profession is that the doctor is too individualistic. That is of necessity true remarks the *Detroit Medical News*. A chemist, a physicist, and a mathematician can prophesy the resultant of given elements, forces or factors when combined. Exact science is exact because of this capacity to foretell.

In medicine the certainty of foretelling does not exist. A biological organism has

the capacity of growth and senescence, of mental development and deterioration. When to these is added the third variable of a sense of ethics, the diagnosis and prognosis makes of each “case” a major problem in the practitioner's art.

It is the degree in which the doctor possesses the ability to treat a patient as an individual that characterizes his qualifications.

AMERICAN HEROES OF SCIENCE

At Hamburg, Germany, recently, forty American radiologists and roentgenologists were named among 165 heroes of science who sacrificed their lives in medical research. The names are chiseled on a sandstone memorial in front of the Roentgen

Institute of St. George's Hospital. The honored Americans include F H Baetjer, Baltimore, W I Dodd, Philadelphia, E Fleischmann, San Francisco, R M Machlett and E W Caldwell, New York, W C Engelhoff and R Friedlaender, Chicago.

Correspondence

[THE JOURNAL reserves the right to print correspondence to its staff in whole or in part unless marked private. All communications must carry the writer's full name and address, which will be omitted on publication if desired. Anonymous letters will be disregarded.]

A Layman Inquires

New York City

To the Editors

"Time to make everything snug, and prepare to 'ride it out'" concluded the leading editorial in the September 1 issue of your JOURNAL. If this period of quiescence which your editor senses, if this silence on the part of the proponents of State Medicine is indeed an ominous one and a lull preceding a "storm"—then this correspondent seriously wonders whether or not the organized profession is going to heed the "storm-warning" and rally from its unorganized apathy, utilize well these "windless" days and truly prepare to "ride it out"? Will it not be a little too late when the "wind" of propaganda is upon it with doubtlessly renewed vigor for the profession then to formulate an effective counter-program?

In the past the organized profession has silently and sincerely trudged along, healing the sick, counseling its members and adhering to its ethics. Then came the blast from the proponents of socialized medicine for this country. Your journals, nearly every one, answered with intense rebuttals, a sense of outrage bursting forth from every line, and from the profession came a stream of well-timed and fact-laden retorts to the propagandists. *To the propagandists*—and therein perhaps lies another weakness. When the germs of state medicine were sown in this country, when the "wind" of the propagandists was released, the germs were not only scattered on the soil of the profession but were subtly planted in the gullible loam of the laity, and the "wind" hummed an entrancing tune in its ears.

But your keen rebuttals, your revealing facts and apt analogies concerning the standards of medical care here and abroad did not and do not reach it,—and laity, your patients!

The proponents of State Medicine realize that their two most fertile fields of activity consist of the laity which has thus far only heard one side of the question (their side), and of the post-depression and younger medical men who are under economic duress. You, through your journals and excellent society machinery have only perhaps definitely reached the latter. The former as yet goes unprotected, untaught and scarcely warned against the vicious diatribes of the

proponents of State Medicine. What will be your next move—how are you going to prepare to "ride it out"?

Very sincerely yours,

NAME OMITTED UPON REQUEST

September 3, 1936

An Ex-Coroner Disagrees

15 Cayuga St.
Seneca Falls, N Y

To the Editor

In the September 1, 1936, issue of the N Y STATE JOURNAL OF MEDICINE, the first sixteen pages of the Scientific portion were devoted to an article, "The Teaching of Forensic Medicine", written by Dr. Harrison S. Martland of Newark, N J. As the entire magazine consists of 83 pages, it is evident that you considered Dr. Martland's article of great importance as almost 20% of the reading space for the month was allotted to it. That there is a need in the Medical profession for more knowledge on the subject of medical jurisprudence and medical legal medicine, is a point well brought out and demonstrated in the article mentioned. Dr. Martland is a resident of New Jersey and is familiar with the workings of the New Jersey laws but this knowledge does not, however, qualify him entirely to speak for New York State or other states to which this familiarity does not extend. As a Coroner, with twelve years' experience in up-state New York, I resent very strongly the conclusion on page 1195 that "the position of Coroner is usually held by an individual whose incompetence is matched only by his venality", for personally, I have never seen a dishonest coroner or any attempt at grafting by any incumbent of the Office of Coroner. With regard to the abolition of the coroner, with his "blunders" and "damnable inquests", as they are styled by Dr. Martland, it is in my opinion very doubtful, if the public could be served any better by the exchange of the coroner for a medical examiner outside of the large centers of population. In New York State there are at present 96 coroners, of which the large majority are physicians. These coroners are apportioned in the various counties according to the density of population, and are educated physicians in active practice. They are County officials,

the common cold within hours can be pneumonia, the common fracture can result in a disability for life reducing earnings by a half, diabetes can be lived with or, improperly treated, a cause of too early death, improper diagnosis can mean a life from cancer or prolonged periods of invalidism from any of many causes. When you abandon present standards for fixed sum payments, you enter upon a principle in the operation of which the physician profits most from performing the minimum service—a practice wherein the man who pays hard-earned money for months and years may find the institution that took his payments non-existent when he calls upon it in his time of need.”—J. G. Crownhart in the *Milwaukee Medical Times*

“THE PUBLIC is a very incompetent judge of your skill and knowledge, but it gives its confidence most readily to those who stand well with their professional brethren, whom they call upon when they themselves or their families are sick, whom they choose to honorable offices, whose writings and teachings they hold in esteem. A man may be much valued by the profession and yet have defects which prevent his becoming a favorite practitioner, but no popularity can be depended upon as permanent which is not sanctioned by the judgment of professional experts, and with these you will always stand on your substantial merits.”—The *Saint Louis County Medical Society Bulletin* has chosen the above from the writings of Oliver Wendell Holmes for its issue of September 4, 1936

THE GENEVA ZONE

It should always be a matter of much interest to the entire Medical Profession when one of its members distinguishes himself by a valuable contribution to the sum total of human happiness and welfare, even though, or perhaps especially, when it is of a non-medical character. When such is the case the contribution takes on somewhat the nature of the soldier's bravery “outside the line of duty” for which special awards exist.

A case in point is the service of a French physician Dr. G. Este' de Metz, who has organized and is laboring at expanding a most laudable humanitarian movement. This is the “Geneva Zone” idea. In substance, the plan is to establish all over the world in properly chosen locations, distinctly neutral areas, where in time of, or in the event of,

war, the aged, the infirm, children, pregnant mothers and others who because of physical handicaps are entitled to civilization's special consideration, may be completely protected from the inhuman ravages of war. These areas or zones are to be administered by properly qualified persons, entirely free of political, religious or other potentially combative control.

If the idea, even to that extent, spreads and is successful, says *American Medicine*, it is a great humanitarian movement entitled to respect and support from all right-minded people. If, eventually, it transcends the bounds already set for it, it may lead the way to real world peace—to making the entire world an enormous Geneva Zone where all may be protected from the brutal and selfish aims of war.

TOO INDIVIDUALISTIC

A criticism heard against the medical profession is that the doctor is too individualistic. That is of necessity true remarks the *Detroit Medical News*. A chemist, a physicist, and a mathematician can prophesy the resultant of given elements, forces or factors when combined. Exact science is exact because of this capacity to foretell.

In medicine the certainty of foretelling does not exist. A biological organism has

the capacity of growth and senescence, of mental development and deterioration. When to these is added the third variable of a sense of ethics, the diagnosis and prognosis makes of each “case” a major problem in the practitioner's art.

It is the degree in which the doctor possesses the ability to treat a patient as an individual that characterizes his qualifications

AMERICAN HEROES OF SCIENCE

At Hamburg, Germany, recently, forty American radiologists and roentgenologists were named among 165 heroes of science who sacrificed their lives in medical research. The names are chiseled on a sandstone memorial in front of the Roentgen

Institute of St. George's Hospital. The honored Americans include F. H. Baetjer, Baltimore, W. I. Dodd, Philadelphia, E. Fleischmann, San Francisco, R. M. Machlett and E. W. Caldwell, New York, W. C. Engelhoff and R. Friedlaender, Chicago.

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with power to use the funds of the County to investigate crime, with the power of subpoena of witnesses, the power of removal of bodies for examination to such places as may be deemed proper, the power to order and employ a physician to examine the body, and report the cause of death, and the power to employ one or more physicians to perform an autopsy, if this be necessary, to discover the cause of death. They, also, have the power to hold Inquests in suitable cases, but do not impanel Coroners' Juries. Inquests are held at such times and places as the Coroner may designate and are presided over by the Coroner who usually requests the District Attorney of the County to conduct the questioning of witnesses who are under oath. The legal procedure for employing the Coroner in New York State is, that in cases of sudden death from any cause, the local Health Officer is to be notified. He may or may not in his judgment turn the case over to the Coroner for investigation. When the Coroner has ascertained the cause of death from a physician who has examined the body, with or without autopsy, he is ready for the inquest, if he believes one to be necessary. After the inquest, if he is convinced that a crime has been committed and by whom, he issues a warrant for the arrest of the guilty person, to be held for examination before a Criminal Tribunal. Thereafter, the case goes through the channels of criminal procedure with the District Attorney as public prosecutor. All this proceeds in an orderly manner and is checked each year by a written report to the County Board of Supervisors, which goes over the Coroner's bill and the items of valuables found on dead bodies and subjects them to a careful scrutiny, and audit. Dr Martland exaggerates the difficulties in establishing the cause of death. In my twelve years' service, I found the cause of death so obvious in the vast majority of cases that any physician would be able to diagnose it on sight. The autopsies in the remaining number cleared up the cases completely so that not one single case required the elaborate pussy footing and detective work that Dr Martland seems to consider requisite for the Coroner or the medical examiner. In the examination of unknown bodies, it has always been possible in my experience to ascertain, sooner or later, their identity and to get into communication with their relatives or friends. The substitution of a full time "Medical Examiner" for the Coroners now working in this County would mean that a full time Pathologist would have to be employed, who is an expert Toxicologist. His salary alone would be about five times, at least, what the

four Coroners combined cost the County at the present time, and he might have, possibly, one case a year where his expert knowledge would be necessary. With County laboratories operating in the vicinity, the Coroners have no difficulty in obtaining chemical analyses of body fluids or visceral contents, which are entirely satisfactory.

In closing, would say that the unjust abuse of the Coroners without the support of reliable facts does no good in attempting their displacement, even when aided by somewhat feeble profanity, for at present the ancient and honorable Coroner system is working quite satisfactorily and very economically in New York State.

As a constructive reply to such unjust criticism, an Organization of New York State Coroners, to protect themselves against such unwarrantable attacks, would be a logical and not an impossible result.

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Ex Coroner, Seneca County, State of New York

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Very truly yours, I S FALK

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PROCEEDINGS OF THE EXECUTIVE COMMITTEE

September 10

Information concerning a new movement called the Doctors' Club—Residences was filed for reference without action. Physicians in this State and also throughout the country have received letters from an Organization Committee which seeks contributions to launch this effort to set up, on a nation-wide basis, homes for superannuated, impoverished physicians. Investigations, instigated by the Secretary through one member and through the Better Business Bureau of New York, indicate that the objective is sound, that the effort is bona-fide, that the individuals concerned are reputable. It should be noted that in New York State this would parallel the Physicians' Home, Inc. which has the sympathetic approval of the State Society.

A question, brought to the attention of the Committee by Dr. K. Winfield Ney of New York, of possible recognition for income tax deduction purposes of charitable work by physicians in hospitals and dispensaries, was referred to the Committee on Economics for full study and report.

Following a suggestion by Dr. C. Ward Crampton of New York, the Committee requested the Committee on Public Health and Medical Education to set up a Sub-Committee on Cancer.

It was brought to the attention of the Committee that two employees of the Yorkshire Indemnity Company now carrying our malpractice insurance under the group plan, were recently convicted of accepting bribes in connection with a fraudulent accident claim. It was noted that both cases are now on appeal. The Executive Committee recorded its opinion that even if the convictions should stand, the situation as regards the integrity of the Yorkshire Indemnity Company is similar to that of a bank whose employee may have absconded with a depositor's funds. Therefore, the Secretary was empowered to advise any inquiring member that, in the opinion of the Executive Committee, he can safely insure or continue to insure with the Yorkshire Indemnity Company under the group plan.

The Committee on Public Health and Medical Education reported the formation of the following sub-committees which were approved:

Pneumonia Control

Russell L. Cecil, *Chairman*, New York City
Oliver W. H. Mitchell, Syracuse
Clayton W. Greene, Buffalo
Peter Irving, New York City

Maternal Welfare

James K. Quigley, *Chairman*, Rochester
Martin B. Tinker, Ithaca
Oliver W. H. Mitchell, Syracuse

Child Hygiene

Edw. J. Wynkoop, *Chairman*, Syracuse
Leo F. Schiff, Plattsburg
Oliver W. H. Mitchell, Syracuse

Nursing Education

Clayton W. Greene, *Chairman*, Buffalo
Oliver W. H. Mitchell, Syracuse
Russell L. Cecil, New York City
Martin B. Tinker, Ithaca

Cancer Control

Edw. G. Whipple, *Chairman*, Rochester
Martin B. Tinker, Ithaca
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In connection with the study that has been made by the Committee on Economics of hospital customs (distinction between "medical care" and "hospital care") the President was empowered to appoint a special committee with himself as chairman to confer with the State Hospital Association. It is hoped in this way to iron out matters that have been the subject of recent debate between hospitals and the profession.

Information came from the Committee on Workmen's Compensation that agreement had been completed with the Compensation Rating Board as to arbitration procedures.

It was noted that the Commissioner of Labor has not as yet promulgated a fee schedule for the rest of the State outside of the Metropolitan area. The Secretary was directed to advise the Commissioner that the Executive Committee favors the Metropolitan schedule for the rest of the State *without reduction*.

The Workmen's Compensation Committee's stand indicated in the following paragraph was definitely approved, even though litigation may ensue:

The question now arises whether this Committee shall pursue the course (which it thinks best and proper and in accordance with the law) of refusing [rather advising County Boards to refuse] to qualify a physician who is employed by a lay or corporate owned X-ray laboratory and shall refuse also to recommend the licensing of such lay or corporate owned X-ray laboratory. In this event we shall be required to defend our action in the courts. We believe that this portion of the amended Workmen's Compensation Act which was introduced by interested parties as an amendment at the very last moment against our advice is unconstitutional in that it attempts to condone what under the Medical Practise Act is clearly a violation of the Educational Law of this State. Whether the amended Workmen's Compensation Act supersedes in this respect the Educational Law is a question to be determined by the courts.

Officers were appointed for the Physical Therapy Session: Dr. Madge C. L. McGuinness of New York, *Chairman*; Dr. Harold J. Harris of Westport, *Secretary*.

COMMITTEE ON WORKMEN'S COMPENSATION

The Workmen's Compensation Act was amended by the Legislature in 1935 primarily to remove abuses that had crept into the medical care of injured workmen. There is good reason to believe that the amended Act has already brought about a change for the better. A larger number of competent and ethical physicians have been drawn into this work under the free choice principle, and injured workmen have more confidence now under the care of their own doctors that not only will they be properly treated, but that their rights to proper compensation will be protected. It should be the aim of every physician to improve his knowledge in the field of industrial injuries and diseases. It is the purpose of organized medicine to provide every opportunity for the practitioner of medicine to become more familiar with the latest methods of practice in the field of industrial medicine. Important as are the legal and administrative aspects surrounding the care of patients injured while at work, the prime consideration of the physicians should be to provide the highest type of medical care and to restore the patient to his former employment *as soon as possible*. There is every reason to believe that under the free choice principle, the large number of efficient and ethical practitioners who have registered under the amended Act will, under the fee schedule promulgated by the Commissioner, bring down the cost of medical care. It is not the

cost of big operations that increases the total cost of medical care in industrial medicine. It is the overtreating and improper care of minor accidents resulting in complications and in increased disability that in the aggregate raise the cost inordinately.

During the month of October the New York Academy of Medicine is devoting a Fortnight to the subject of traumatic occupational diseases and hazards.

On Monday night, October 26, the Medical Society of the County of New York has arranged an interesting program on the Workmen's Compensation Law. At this time the Hon. Bernard L. Shientag, Justice of the Supreme Court, and former Industrial Commissioner, will speak on the History of the Workmen's Compensation Law and the Lessons it holds for the future. The Hon. Meier Steinbrink, Justice of the Supreme Court, will speak on "The medical witness."

The program of the Graduate Fortnight is especially recommended to all physicians. Numerous clinics are to be held in many of the hospitals of the city, and a varied clinical program of interest to practicing physicians, designed to put them in actual contact with experts in this field, is afforded. Physicians are urged to take advantage of this great opportunity to refresh themselves in this timely and important branch of medicine.

The Silicosis Bill, recently signed by Governor Lehman, (Chapter 887, Laws of 1936) contains an amendment to the Compensation Act which is of interest to physicians of the State of New York. Section 70 of this act reads as follows:

S 70. Special medical examiners. The Industrial Commissioner shall divide the state into five districts and in each district may appoint two or more special medical examiners who shall be licensed physicians in good professional standing, each of whom shall have had, at the time of his appointment, and immediately prior thereto, at least five years of practice in the diagnosis, care and treatment of pulmonary diseases. Such examiners shall be employed on a per diem basis as the exigencies of the work may require. Fees of examiners shall be fixed by the industrial commissioner within the limits of the appropriation therefor. Each position of special medical examiner provided herein shall be in the exempt class of civil service.

Whenever a claim is made under this article and an examination of the claimant by an impartial physician is desired by any party in interest, the industrial commissioner shall order such medical examiners to make the necessary

medical and x-ray examination of the claimant in an effort to obtain the medical facts in an impartial manner.

For the purposes of adjudication under this chapter, the industrial board shall adopt rules of practice and procedure and shall prescribe methods and standards under which physical examinations, x-rays and other studies shall be conducted.

The five districts referred to above are the compensation districts of the State, namely, New York, Albany, Buffalo, Rochester, and Syracuse.

The Industrial Commissioner, in accordance with this act, is now engaged in the selection of personnel for these posts. Those physicians who have the necessary qualifications and desire to be considered should communicate with Elmer F. Andrews, Industrial Commissioner, State Office Building, 80 Centre Street, New York City.

In view of the fact that appointments are to be made within the next few weeks, interested physicians are urged to act promptly.

DAVID J. KALISKI,
Chairman

DISTRICT BRANCHES

The thirtieth annual meeting of the Sixth District Branch was held at Ithaca on September 17, in the theater of the Willard Straight Hall at Cornell University. Attendance reached about 150.

At the morning session Dr William A Brumfield of the State Department of Health described the Syphilis Program of the Department which is now under way. Dr John C M Brust of Syracuse gave a practical review of "Diagnosis and Treatment of Anal Abscess and Fistula." Dr Stafford L Warren and Dr Charles M Carpenter of Rochester presented colored movies, demonstrating their new experimental work with thermic treatment of gonorrheal infections.

In the afternoon President Winslow made a stirring address on "The Doctor's Obligation." Dr David J Kaliski, Director of the Workmen's Compensation Committee, described procedures for arbitration by the County Boards. He also deplored the apparent intention of the Commissioner of

Labor to set up a fee schedule for the rest of the State outside of the Metropolitan area on a basis lower than the Metropolitan area. On motion duly seconded and carried it was decided that the Sixth District Branch advise the Commissioner that it favors promulgation of the same schedule *without reduction* for the rest of the State as the Metropolitan area.

Secretary Irving expressed the desire of the secretarial office to have closer information of County Society problems.

Dr John K. Deegan, in charge of the new Biggs Memorial Hospital, described with the help of a model, the physical plant, and discussed the policies of administration and medical service of the Hospital.

Dr Chevalier L Jackson of Philadelphia gave a clinical presentation of the ways in which a bronchoscope can be used in diseases of the lungs. He stressed the point that the "bronchoscope is only a speculum" and his slides and diagrams gave a vivid picture of the accomplishments resulting from its use.

Third District Branch

The thirtieth annual meeting of the Third District Branch was held in Albany on September 22. Dr Raymond F Kircher, President of the Albany County Medical Society, welcomed 150 members.

In the morning Dr David J Kaliski, Chairman, Workmen's Compensation Committee of the State Society, detailed procedures for arbitration by County Compensation Boards. In a full discussion of the delay in promulgation by the Commissioner of Labor of a fee schedule for the rest of the State outside of the Metropolitan area (for which a schedule has already been set up) it was brought out that the Committee has recommended to the Commissioner use of the Metropolitan area schedule *without reductions* that have been suggested by interested groups other than the physicians. The House of Delegates took this stand, the Compensation Committee has pushed it, the Executive Committee has so advised the Commissioner.

Dr D M Brumfiel of Saranac Lake gave an illuminating presentation of "Diagnosis and Significance of Silicosis." He indicated clearly that two things are required to make a diagnosis—a characteristic x-ray pattern and a history of sufficient exposure.

President Winslow described the activities of the State Society now under way. Secretary Irving asked the help of County Soci-

ties for the secretarial office and for the JOURNAL, both of which play a considerable part in effecting action, and offered active help to County Societies in their problems.

At the afternoon session Dr Edward S Godfrey, Commissioner of the State Department of Health, spoke of plans to use the recently assigned \$500,000 federal fund for promotion of Department work throughout the State. He described a change in the type of clinics in connection with prenatal work and child welfare to make these educational for the public and for the profession. He emphasized his desire to work hand in hand with the profession in this and other features of Department work.

Dr Herbert M Bergamini of New York City gave an excellent presentation of "Fundamentals in the Treatment of Fractures."

Dr John J Rainey of Troy spoke to the title of "A Review of the Nasal Accessory Sinuses."

The following Officers were elected for the next two years: President Bertram W Gifford, M D, Saugerties. 1st Vice-President Lyle B Honeyford, D M, Catskill. 2nd Vice-President Arthur M Dickinson, M D, Albany. Secretary William M Rapp, M D, Catskill. Treasurer Ernest E Billings, M D, Kingston.

Fourth District Branch

The scientific program of the thirtieth annual meeting of the Fourth District Branch of the Medical Society of the State of New

York will be held at the State Normal School, Plattsburgh, October 2 and 3. The program will be as follows:

OCTOBER 2, 2 30 P M

"Treatment of Burns," Lyman Allen, M D, Burlington, Vermont

"Some Remarks on Hormones," James B Collip, M D, Montreal

"Mid-Childhood Hip Joint Disease," Edward K. Cravener, M D, Schenectady

Election of officers

7 00 P M

Dinner at Hotel Cumberland

Address by Floyd S Winslow, M D

Fifth District Branch

The scientific program of the thirtieth annual meeting of the Fifth District Branch of the Medical Society of the State of New York will be held at the Rome State School, Rome, October 1

OCTOBER 1, 10 00 A M

Address of Welcome, President, Oneida County Society or Dr Bernstein, Supt, Rome State School

"Public Relations at Rome State School" Marjorie S Brulle, Social Worker

"Institutional Treatment, Medical," Leonora L Greteman, M D, Asst. Physician

"Vocational Treatment for Mental Defec-

tives," Robert A York, Vocational Director

"Reminiscences," John B Wheeler, M D, Burlington, Vermont (Harvard 1878)

OCTOBER 3, 9 30 A M

"Pulmonary Response to Inhaled Dust," Arthur J Norwald, M D, Saranac Lake.

"Recognition of Early Congestive Heart Failure and Treatment," Lewis M Hurxthal M D, Boston, Mass

"Hyperthyroidism in Children," George E Beilby, M D, and John C McClintock, M D, Albany

Addresses by Officers of the State Medical Society

Luncheon

1 30 P M

"Surgical Aspects of Peptic Ulcer," Donald Guthrie, M D, Sayre, Pa

"Cardio-Vascular Syphilis," Edwin P Maynard, M D, Brooklyn

First District Branch

The scientific program of the thirtieth annual meeting of the First District Branch of the Medical Society of the State of New York will be held at the Morrisania City Hospital, 168 St. at Gerard Ave., New York City, October 7

9 A M

"Operations for Complete Prolapse of Uterus," Harry Aranow, M D, F A C S, New York City

"General Surgery," George E Milani, M D, New York City

"Urological Surgery," Terry M Townsend, M D, F A C S, New York City

"Current Pediatric Cases," Louis H Barnberg, M D, New York City

"Unique Methods of Tonsillectomy," Clarence M. Smith, M D, F A C S, New York City

"Pathological Demonstrations," William Aronson, M D, New York City

"Interesting Neuropsychiatric Cases," S Philip Goodhart, M D, New York City

"Interesting Eye Cases," Thomas Hayes Curtin, M D, New York City

Luncheon

AFTERNOON SESSION

"State Society Problems," Floyd Winslow, M D, F A C S, President, Medical Society of the State of New York, Rochester

"The Journal," Peter Irving, M D, F A C P, Secretary, Medical Society of the State of New York, New York City

"Compensation Medicine," David J Kaliski, M D, Director, Workmen's Compensation Bureau, Medical Society of the State of New York, New York City

"Neurosurgery," Sidney W Gross, M D, New York City

"Demonstration of Unusual X-ray Films," Samuel F Weitzner, M D, New York City

"Surgical Diabetes," Frederick W Williams, M D, and Thomas J O'Kane, M D, F A C S, New York City

"Radiation Therapy of Neoplastic Diseases," William Harris, M D, and Samuel Richman, M D, New York City

"Cardiac Clinic," Edward R. Flood, M D, New York City

"Treatment of Fracture of Femur," William Klein, M D, F A C S, New York City

"Grand Rounds and Demonstrations in Obstetrics," Harry Aranow, M D, F A C S, New York City

comments from the various counties as to any other program which they would like to see developed, which will put the doctor in proper relationship with the State agency for the provision for care of these people

THE CHAIRMAN Dr Elliott, I am going to carry that a little further. If these county society secretaries write to you asking help for each individual county, are you prepared to give them advice as to how to carry on the arrangements, how to make the arrangements in that county?

DR. ELLIOTT We shall undertake to give them the advice according to our current information. That brings a very important point to my mind. Two counties, in discussing with their executive secretaries last night, have become quite controversial with their local welfare offices and have undertaken to make certain adjustments of their relationship. Not that the State Committee or any organization of the State Society would try to dictate to any county how things should be done, but that we may coordinate the various efforts of the various counties and not have some county step overboard and give the State official agencies a justification for something that is unacceptable to the State at large, I think that whenever these issues come up between a local county and their local agency or the State agency that some notice of it, some information about what is going on, should be given to Dr Hambrook's Committee on Public Relations and to the Economics Committee for the economic aspect of it and perhaps even to Dr Farmer's committee on the health angle. I think your State Committee Chairman should be constantly informed of your local county committee relationships whenever they become at all involved with the public agencies

THE CHAIRMAN This fits right into the keynote of action I tried to establish this year. I think it would be well if this group could arrange some definite mechanism. It comes to my mind, Dr Elliott, that you have appointed the members of your Committee as more or less consultants for different areas in the State. That is correct, isn't it?

DR. ELLIOTT Yes

THE CHAIRMAN Why not have the county secretaries, instead of writing to you immediately, approach the sectional member of your Committee? He will be primed to help them, will he not?

DR. ELLIOTT I think so

THE CHAIRMAN To iron the thing out in quick fashion?

DR. ELLIOTT Very definitely, and he will come to the Committee's files if he lacks any detailed information himself

THE CHAIRMAN Well, he probably knows already, does he not, from your long discussions?

DR. ELLIOTT He has, I feel, very complete information at the present moment

DR. NELMS Because of the confusion that now exists and will probably exist in the minds of many doctors regarding the difference between compulsory and voluntary health insur-

ance, I think we might ask Dr Elliott to enlarge a little on the policy that the Executive Committee adopted last spring. As you know, the Legislative Committee has been instructed to support in the Legislature this principle of voluntary health insurance. Dr Elliott has made a study of this problem and I think he is better able than any other man in the State to point out the essential difference between these two types of insurance and why it is possible for the Medical Society of the State of New York to apparently reverse itself in the position that it has taken through the years and to favor some type of controlled voluntary health insurance.

DR. ELLIOTT An architect can't stand at the top and build down, and that is what compulsory health insurance does. Compulsory health insurance starts with a Commission and a Commissioner and then district branches and then local branches and so on down. Contrasted with that, indemnity insurance must be built on the ground. As it has been discussed with the State Insurance Commission, the idea is to limit each activity to a smaller locality, grouping of one small community, of one industrial plant, so that the people who receive the benefits and who pay the freight will be close to and acquainted with the people who are responsible for administration. That makes it possible for indemnity insurance to be operated so that less than five per cent will be spent on administration and more than ninety-five per cent will go for actual benefits to the people who are seeking relief. Contrasted with which, compulsory health insurance is essentially a bureaucracy scheme. It is a job-building political ideal, originally conceived as such in Germany and enlarged upon in every other country, minimized politically perhaps in England at the present moment, but nevertheless still the administrative expense is large. The people who are in authority are remote from the people who are getting the service and the red tape in between leads to serious delay, complications, and dissatisfaction on the part of both the people who are doctored and the doctors who render the care. That, in a nutshell, is the substance of it.

One has worked efficiently, and that is at Brattleboro, Vermont. I have been there several times, dropped into a grocery store and bought something, this, that or the other. They don't know who I am or what it is about, I draw the clerk or whoever I meet into conversation and I haven't found one person up there that didn't speak well of their plan. I met two or three of the doctors and they didn't know who I was. They liked it, and by all the comment that I can get from everyone abroad there is the very opposite opinion prevailing on the foreign scheme. In one instance satisfaction on the part of all the people participating, on the other, dissatisfaction and criticism from all angles.

Lt. DR. NATALE Could Dr Elliott tell us the Brattleboro plan in a few words?

DR. ELLIOTT It was established by the Thomas Thompson fund donation of about \$1500 and it was established first with nursing care. A single person for \$3, a married

couple, I think, for \$3 50, and fifty cents for each child, can be protected against economic disaster due to the demands or needs for nursing care. Then they established the hospital benefit association and boiling that down to this, for \$14 50 a man wife, and two children may have insurance which will protect them for any expense above \$21 in any one sickness episode for one year. Now, is that clear? In other words, if the wife is taken sick in February and must go to the hospital, she must pay the first \$21, after which the insurance picks up the load and carries the next \$300. Perhaps in April the husband is taken sick and he must pay the first \$21. Now, just exactly what the initial payment must be, I am not prepared to say for New York State as a whole or any community, but the principle is this, that the individual demanding a benefit under his insurance is inhibited from making unnecessary demands for trivial, and inconsequential complaints, and the Insurance is relieved of the great cost of administering the details of this borderline zone between health and disease. Anyone that pays out \$20 or \$30, whatever you want to make it, as an initial expense, you may be reasonably sure, is sick, and by that simple expedient they have eliminated all of the malingering and all of the troubles that have beset all the foreign systems.

The fee schedule paid in Brattleboro, Vermont, is better than our workmen's compensation fee schedule, designed by the doctors, and about a year and a half ago by their voluntary action as a group, several of the fees were lowered as a proper adjustment of fees to the conditions which prevailed at the time.

THE CHAIRMAN I want to ask this question, Dr. Elliott, if you will make it plain. Who actually determines whether the doctor's bill in the case is proper or not, and is there any trouble over such a matter?

DR. ELLIOTT None whatever. The arrangement as to what the individual should pay is a question between the patient and the doctor. The patient makes his own choice of doctors, makes his own arrangements, pays his bill, and submits that bill to the Insurance. They make the standard deduction and send him a check for the balance. In other words, it is an indemnity. The Insurance doesn't contract to provide the individual with a doctor. It contracts to reimburse the individual for an expense which sickness and disease have occasioned.

THE CHAIRMAN In other words, eliminating thereby one of the great objections to all insurance things in the past?

DR. ELLIOTT Right.

DR. KENNY Who administers the insurance, Doctor?

DR. ELLIOTT A Miss Wells is the whole works in Brattleboro. She has a parlor up on the second floor, a telephone, and a little desk. This is a town of about five or six thousand with three or four thousand surrounding and this lady by the community gossip route knows everything. I was there visiting her one day and the telephone rang. "Oh yes, Mrs. So-and-so, yes, I know you were

in the hospital. You paid \$42 50? I will send you your check this afternoon." That is the whole administration. Didn't have to send out an investigator. Didn't have to fill in a lot of forms. She knew. And so it goes in the community. Anyone that is seriously sick, the whole community knows about it and this little lady runs the thing. I think the Brattleboro expense of administration has amounted to less than one per cent over a period of more than eleven years.

That is the philosophy of this indemnity insurance as your State Insurance Commission sees it. Keep it within small groups who by linkage of acquaintance and community knowledge of each other can control any abuse which might otherwise develop. As Mr. Bradley, the trustee of the Thomas Thompson Fund, says, "If it is in the group and each one is going to dig into his own pocket to pay the bill, they keep an eye on it, but if we write insurance in Vermont and the insurance office is in Manhattan, the fellow who checks up on it says, 'That insurance company is rich. Let's give Bill a little more,'" and he says that is where your trouble starts in ordinary insurance.

DR. DI NATALE Who appoints this lady?

DR. ELLIOTT The Association of Insurance. It is a mutual association.

Remarks by Dr. Mitchell, Committee on Public Health and Medical Education. I regret very much that Dr. Farmer can't be here, because he is so familiar with the activities of this Committee, having had charge of it, I think, now for about ten years. His recent illness has made it impossible for him to attend, but he is feeling very much better and wanted to be remembered to every one of you.

In the working of the Public Health Committee we feel that one of the chief obstacles to making the work more efficient is some lack of cooperation of the county organization. Of course, there is a great difference in our county set-ups. Some of them have a large membership and some of them small. In some of the county societies one committee would handle a great many activities and in some of the other county societies there are not so many, and naturally the load is bound to vary and also the interest of the individual. On the whole, however, we feel that we have received excellent cooperation from the county societies.

Perhaps one factor that enters into this lack of efficiency at times is the changing of the officers of the county societies. Of course, I think the time will eventually come when a secretary will hold office longer than is common in many of the units. I appreciate why it is that no one doctor cares to be secretary for a long period of time. It is quite a job, and while he gets a great deal of experience, of course, he also gets many complaints and other things to bother him, and he would just as soon somebody else were to handle it for a while. However, as the years have gone by I think we see a tendency to keep the secretaries in office longer, just the same as we see the tendency to keep the officers of our State Medical Society on committees longer, that they understand. I don't know just what

reward is going to come to a man who continues as secretary for a number of years. Perhaps they will make him president if he lives long enough, some great honor like that.

The chief activities of the Public Health Committee you are quite familiar with. At the present time aside from the postgraduate education they center around these four features—pneumonia control, maternal welfare, child hygiene, and cancer control. I don't know of any activity which has gone along better than the work in pneumonia control during the last year. That was evidenced in many ways. In the first place by the members of the Committee itself, the appointment of a sub-committee under the leadership of Dr Cecil, then the establishment of cooperation and a special pneumonia committee appointed by the Commissioner of Health of the State, and bringing together the many activities which may be in operation for pneumonia control, that is, such things as widespread publicity carried on by our own publicity bureau, and the committee in charge of that, the widespread publicity and educational work of the State Health Department, and then the production of the serum and its distribution by the State Health Department, and the establishment of laboratories available for typing and many similar activities, and particularly successful we feel was the education program carried out throughout the State under the direct supervision of our Committee. So that in practically all counties, as you know, from the detailed report which was published in the *JOURNAL*, practically the entire State, each county society, had or more meetings on the subject of pneumonia. We feel that an excellent start has been made and as well as we can determine from discussing it with the various organizations and individuals, a really much better program will be carried out this coming winter.

We hope that each county society will again devote one program to the question of pneumonia and if you are not in a position to arrange that program yourself, we will welcome a letter from you or, if you so desire, a personal visit from one of the Committee to talk over the question of pneumonia and go over that program. Don't think because you held one meeting this last year that you have done all that is expected to be done on the pneumonia problem, because it is constantly expanding. More work has been carried out, intensive work in the last two or three years, and in all likelihood we can do a great deal more from now on in the diagnosis and treatment of pneumonia than we have ever done before.

The maternal welfare program is under the direct supervision of Dr Quigley of Rochester who is the chairman of the sub-committee, and we also hope that every county society will have its committee on maternal welfare or commission. (Some call them commissions and some committees.) Be active from now on. If you have not organized a maternal welfare committee, we suggest that you do that immediately. Any questions which arise in your minds about the program that you want to carry out or about what is being done else-

where, either in different counties in this State or in other states, write to Dr Quigley at Rochester and he will supply you with the information. Again, if you feel that some member of the committee, particularly Dr Quigley or some members of his committee or the advisors, could help you, don't hesitate to make that request known and as soon as possible one of the physicians will meet with you.

The child hygiene program has not been formulated as yet. A meeting will be held very soon and a number of consultants will meet with the sub-committee to discuss the proposed activities of a child hygiene program in New York State. Of course, as all of you realize, there are a number of organizations involved in a child hygiene program, particularly through our government agencies, and we want to have a very clear understanding as to what activities are to be carried out and what is expected of them. In charge of that program for this year is a member of the Public Health Committee, in charge of the sub-committee is Dr Wynkoop of Syracuse and so from now on any questions or any information that you care to ask about the child hygiene program should be directed either to Dr Farmer or to Dr Wynkoop. Perhaps it is just as well with most of these things if you would direct your communication to Dr Farmer, then he can forward it to the sub-committee chairman or to the particular doctor that he thinks could best handle that.

On the question of cancer control the program for that is in the making, and here again a number of different organizations are concerned. Just how extensive that program will be, nobody can say at the present time, and the sub-committee of the Public Health Committee has as its chairman Dr Ed Whipple of Rochester. Meetings by the chairman, Dr Whipple, and the members of his sub-committee will be held with the representatives, of the government, the State Health Department, and other organizations concerned with cancer control, such as the American Society for Control of Cancer, etc. So we must await further information about the details of these programs.

Now, of course, the Committee on Public Health and Medical Education can't solve all these problems by itself and we will naturally be working with the other committees of the Society. As fast as programs are accepted or the outlines of programs, the details are accepted by the Committee. They will be submitted to Dr Irving and those in charge of the publications, and such reports will appear in the *JOURNAL*.

I regret again to say that Dr Farmer cannot be here and give you more details, but essentially these matters are the chief activities which concern that Committee at the present time.

THE CHAIRMAN. In asking for discussion, I would like to make one comment on my own. This method of sub-committees for different things that one committee takes care of, has proven most satisfactory and successful with this particular committee.

MR. NEFF, Nassau County. I have been

asked to seek some advice on our present checkmate on the pneumonia campaign. We have succeeded in getting plenty of laboratory facilities for patients in the hospital, but we have not been able to make any arrangements for the indigent outpatient. The fee in the private hospital for typing is five dollars. This is out of reach of the borderline economic group, and we see no disposition on the part of local or State relief authorities to get into a preventive medicine program. So we hardly can expect to get a five dollar laboratory bill paid by them.

DR. MITCHELL. Again, of course, the conditions which exist in the different cities and counties are quite different. In many of our communities provision is made whereby the typing, for example, of pneumonia is done free. That is true in my own county whether the patient is in or not in the hospital. I know of another county where that provision doesn't exist. So that we hope in time at least that adequate financial assistance may be given through the government agencies which will permit the typing to be done without direct cost to the patient. Now that doesn't exist in your county at the present time. Do you think that there is any possibility of bringing that about?

MR. NEFF. If your committee issued a statement that that was the responsibility of governmental agencies I think it would help very materially.

THE CHAIRMAN. Would you like, Doctor, to have that go straight from the committee to the authorities in your county?

MR. NEFF. No, I think that would be a little too obvious. I think probably a statement appearing in the JOURNAL could be accepted by us and be more useful.

THE CHAIRMAN. Dr. Mitchell, will you remember that?

DR. MITCHELL. I will and will take it up with Dr. Farmer and also with Mr. Neff and see what we can do directly.

Remarks by Dr. Nelms, Chairman, Committee on Legislation. I don't believe anybody can approach medical legislation in this state without first paying tribute to Dr. Lawrence. Last year over 300 bills were introduced in the Legislature having medical aspects. These bills are not earmarked. Somebody has to go over them carefully. That lot falls to Dr. Lawrence. I don't believe there is a more faithful or a more efficient servant of the State Medical Society than Dr. Lawrence. I feel that if the members really realized the details that go to make up the legislative bureau that we would all feel like taking off our hats every time we pass it.

THE CHAIRMAN. Dr. Lawrence, stand up and take a bow.

DR. NELMS. Dr. Lawrence didn't know that I planned to pay him this tribute, but I think if you could know the inner workings of the legislative bureau that you would come to the same conclusion.

So far our committee has had no meeting.

It has made an attempt to have a meeting but something happened and a quorum was not present. However, there are certain mandates that have been given to us by the House of Delegates. I think I can with propriety discuss some of these. In the first place, when I was elected Chairman of the Legislative Committee I asked myself one question and that was this, how does legislation fit into the scheme of organized Medicine? You can't answer that question unless you ask yourself, what is organized Medicine? I feel that we owe the doctors two things fundamentally, speaking generally. I think we ought to aim to make the doctor a better doctor, secondly, that we should attempt to improve his economic status. If we do these two things, we justify our existence. We are then in a position to render the public a more efficient and a better type of medical service. I feel that the legislative committee, particularly the profession, owes not only a duty to ourselves but to the public. We don't know from day to day what type of bill is going to be dropped into the box on the Hill and legislators, committee chairman, even the Governor, will very often come to our legislative bureau for advice and guidance. So that in this problem of legislation our duty is not only to the profession but also to the public.

I think we can divide the profession into three great groups. We have first the ultra-conservative, the doctor that can see no change. Things have always been good enough for him and he hasn't yet caught the spirit of the times. Those of you who attended the last session of the House of Delegates know that we have also another group, the impatient, radical group, the group that is prone to take chances, the group that is impatient. They advocate and sponsor all types of things, things that aren't justified by reason or experience. Then we also have this great middle class that you and I belong to, a group that is cautious but not obstinate, a group that feels that we do need change, but we are not willing to plunge ourselves into a state of chaos. I feel that it is the function of the legislative committee to interpret the trend and to give sane and safe advice as to what type of legislation we should really sponsor. I want to speak for a little while about the proposed program of the legislative committee. There were certain things referred to us by the House of Delegates and most of these carry with them the provision that we must sponsor them. We have no choice. I think I am in personal agreement with most of them and we might take them up in order.

First is the licensing of foreign physicians. The House of Delegates gave us certain leeway here as to what we should do. Last year the legislative committee sponsored a bill which would make full citizenship a requirement for licensure. So far I see no reason why we should change our stand. The resolution in the House of Delegates was to the effect that we do something about this question of license.

by endorsement. I thought you might be interested in the figures compiled by the Education Department for the license of foreign physicians. During the year 1935-1936 there were 225 foreign physicians licensed in New York State. In thirty-six other states there were 114. During the last five years, 1931 to 1936, there were 843 foreign physicians licensed in New York State and in thirty-six other states there were 478. Of this number 479 were licensed by examination and 364 by endorsement. Now immediately somebody goes up in the air and says that you ought to do something about that. We propose to try to do something. There are certain fundamental questions involved. These doctors come in under the immigration quota, and it is a serious question just how far we are justified in going in determining where a man admitted under regular immigration quota can go, how far we are justified in telling him where he shall locate or what he shall do after he does locate. Now the Board of Regents have a special committee appointed to investigate this problem and it is highly probable that they themselves may come to some definite conclusion. I don't believe that the legislative committee is prepared nor should take a definite course of action until the report of the Board of Regents is available, particularly in view of the fact that there is a possibility that organized Medicine may be ultimately given a voice in their deliberations. As I said before, last year the legislative committee sponsored legislation which would make full citizenship a requirement for license, and at this time I see no reason for reversing our stand in that respect.

Now the question of nurse anesthetists. There was a resolution adopted by the House of Delegates which would limit the giving of an anesthetic to physicians and dentists except in cases of emergency. Attempt was made last year or the year before, I have forgotten which, by the legislative committee to do something about this problem. There is on file in the legislative bureau a very vigorous protest from very representative members of this society opposing this type of legislation. So that I think we can construe that the profession itself is not wholly united on this question of the nurse anesthetist. We are sure that the hospitals, the State Hospital Association, will oppose us on any type of legislation in this respect.

Some of you may have heard rumors from the State of California where their courts recently declared that a nurse giving an anesthetic under the supervision of a surgeon was not practicing medicine. This has been sustained by the highest courts in California and the hospitals are staking their all on that decision.

It seems that three years ago a physician of Los Angeles, who limits his practice to anaesthesia, on his own initiative and without consulting or advising with the county society and the State Medical Association and with an attorney of his own selection initiated an injunction proceeding against a nurse who was giving

anaesthetics at one of the leading hospitals in Los Angeles. The issue came to trial. The court ruled under the testimony given that the administration of an anaesthetic by a nurse under the direction of a surgeon did not constitute the practice of medicine and therefore it declined to issue an injunction restraining her. The poor preparation of the case, the failure of instructing the expert witnesses, the fact that the hospitals joined into the defense of the nurse, calling in members of its staff who testified that it was a common practice and that the nurse anaesthetist was under the direct supervision of the physician, occasioned the judgment that was issued by the court. Then suddenly realizing the seriousness of that court decision a cry for help was sent to the counsel of the California Medical Association. The counsel endeavored to appeal the case to the Court of Appeals and obtain a verdict to reverse. Briefs were prepared and arguments were made. They had to be based on the transcript in the Circuit Court where in that transcript reputable surgeons testified that the nurse was under their direct supervision in the administration of the anaesthetic. Based solely on that testimony the Court of Appeals declined to reverse the Circuit Court's decision. An appeal was then made to the Supreme Court for a reversal and the Supreme Court rendered a similar decision sustaining the lower court. This places on record in California courts a legal opinion that the administration of an anaesthetic by a lay person under the supervision of the operating surgeon is not a violation of the practice of medicine. The whole thing was a comedy of errors from the first institution of the action. It is thought in California that had this been handled properly and the proper witnesses been examined and if the procedure had been one of charging the nurse with a violation of the Medical Practice Act and not trying to seek an injunction, a far different decision would have been obtained. This indicates how a mess can be brought about through an individual doctor proceeding on his own initiative and without full information and knowledge of the proper method of procedure, thereby placing on record a court decision that is adverse to professional interests.

On account of the expense incurred the California State Medical Association was obligated to desist from further attempts to start a proper procedure.

The significant thing of this decision is that it is now on record in one of the courts sustained by the Supreme Court of California that a nurse giving an anaesthetic under the direction of a surgeon is not really practicing medicine. Now as I see it that does not prevent us from introducing additional legislation which will limit the giving of an anaesthetic by registered licensed physicians and dentists except in the cases of emergency. From a strategic point the question comes up—a quite important question—whether we are justified in asking that this legislation take effect immediately. It is possible that if we seek legislation this year and ask that it become effective in another year or within a few months, this would give the hospitals and physicians also, an opportunity

to prepare for this new field that is really opened to them. It seems one way out of a difficult situation.

As I said before, the committee has not yet taken a definite stand on this question. We are bound by the resolutions of the House of Delegates to sponsor some type of legislation which would limit the giving of an anesthetic to licensed physicians and dentists.

A resolution was introduced in the House of Delegates asking that the physiotherapy clause be taken out of the Medical Practice Act. The committee on resolutions asked that this be not adopted and it was not adopted. We have information, however, that the Education Department proposes to introduce legislation asking that the physiotherapy clause in the Medical Practice Act be removed. The details of that legislation or that proposed legislation have been changed a time or two and we are in full knowledge of what is contemplated at the present time. Whether any additional changes will be proposed, we don't know.

Now advertising by physicians. We are instructed to do something about that. This is an old subject and perhaps some of you have seen these various types of newspaper advertisements and circulars that some of these quacks circulate, particularly in the larger cities. The committee last year introduced a bill which would prevent any type of advertising. This bill was vigorously opposed by the daily newspapers. They took the stand that they had a code of ethics that was equally as high and as binding as that of the medical profession and they resented any intrusion by the profession into that type of supervision, and so the bill was lost. Again it is a strategic question, a question of strategy, whether we would not be justified in reintroducing this bill and leaving out the daily newspapers. It is possible that we might get the bill through if we left out the daily newspapers and we would be justified in doing this only on the ground that a half a loaf is better than none.

Now the amendment to the Workmen's Compensation Law. This was one amendment that was introduced in the House of Delegates and adopted, and that was to the effect that the compensation law be amended which would permit and recommend submission to the Legislature of New York State of an amendment to the existing law which will empower the Industrial Board to assess the cost of medical care and compensation against the non-insured employer. There should be no controversy about that. I think this recommendation really originated from our committee on workmen's compensation.

Now the lien bill. You know that the hospitals last year got their lien bill through and, unfortunately, the doctors did not get theirs. We are pledged or bound by the House of Delegates to sponsor no lien bill that does not include nurses. The probabilities are that we will endorse the same bill that was passed by the hospitals last year and add physicians and nurses to it.

On the question of medical indemnity, that is the same problem that Dr. Elliott was discuss-

ing and there is no need for further discussion there.

There has grown up in some quarters some enthusiasm for a so-called Basic Science law. Some of you have read about it. Perhaps some of you have become quite interested in it. Basic science law is on the statute books of some thirteen states. It is the law in Canada and in some of the insular possessions of the United States. The essential features of this law is that any candidate for professional licensure shall be required to take an examination in certain subjects that are called basic before he can be admitted to the regular professional examinations. Some men felt that the enactment of a Basic Science law in this state would be an efficient curb on chiropractors and other quacks. As I said before, the committee has not yet taken a definite stand on this question, because we have been unable so far to get a full meeting of the committee. However, Dr. Lawrence has made a survey of the thirteen states where this law is effective and the replies that have been received so far are very enthusiastic. It has tended to reduce the incident of the cults and from their standpoint is quite commendable. In the approach of this problem, however, there are certain things that are fundamental and in making these comments I want you to feel that it is my own reactions to this problem so far. We have in this state a Medical Practice Act whereby we say to all comers. You present two years of college work, four years of medical work in an approved college, and then you can take our professional licensing examination.

Now I personally feel that that requirement is basic. I think we ought to consider it as such. If a man meets these requirements, then wants to practice osteopathy, or if he wants to practice homeopathy, we might stretch our imagination and our liberality and say. If you want to practice chiropractic, all right, but meet the same educational requirements that we do.

Now I also feel that one of our greatest weapons against official recognition of chiropractors in this state so far has been this one argument. If you require two years of college work, require four years of work in an approved medical school, with the doctors, why require any less preparation for any other type of applicant for the healing art? Judged in this light, the Basic Science law does not apply to this state as it does to many other states, California for instance. They have four licensing boards. They have a licensing board for the regular practitioners. They have another for the midwives, another for the druggless healers, and so on. So far in this state we have succeeded in keeping from the chiropractor his most prized possession, and that is, official legal recognition. There is no such thing in New York State as chiropractic as far as the law is concerned, and I personally feel that we should stick to the minimum requirements that are now set forth in the Medical Practice Act and not create by implication an intermediate field where we tactfully admit that there is a sphere somewhere for healers that are less-fitted than we ourselves.

This in substance will be perhaps the major part of the legislative program for the coming year. We never know what is going to be dropped into the box by individual legislators. Many times the bills are of a type that we can sponsor, that we can go along with. Many times they are bills that we have to oppose. I hope we can keep this fundamental thing in mind, however. I think we should concentrate on the things we need the most and not clog our program with a lot of hodge-podge attempts to revolutionize medicine.

This brings up the last point I want to make, and that is our legislative organization. I was amazed at the efficiency with which this organization functions. The office of the legislative bureau, headed by Dr Lawrence, gets these bills very shortly after they are introduced. Dr Lawrence goes over them. Bulletins are sent to the chairmen of the legislative committees and within a very short time each chairman of each county legislative committee is aware of what has been introduced within a few hours before. Now it is very obvious that the state committee and Dr Lawrence in particular cannot concentrate on every legislator. We feel that our job should be to contact and influence the leaders, but the individual legislator is the problem of the local county society and we feel that it is the job of the legislative committee to contact the legislator in his district, find out where he stands on certain proposals, find out what his attitude is, make known the wants of that community to that legislator. We will try to give you the cue as quickly as we can as to what is a sound and substantial attitude on these problems. Thank you.

THE CHAIRMAN I think the last item that Dr Nelms brought forth might be discussed first. Then we might possibly retreat to the individual debatable laws just for our interest. This matter of help from the legislative committee to the counties and help from the counties to the legislative committee seems to me to require quite a little concrete phraseology. For instance, I heard last night from one of our members the idea that we should be careful with candidates for office. We shouldn't apply too much apparent pressure at that time but should contact legislators locally after election through the county societies, and have that an outstanding piece of work that the county does. Dr Podvin has some ideas on that subject.

DR. PODVIN I don't know that I have anything to add to the very excellent report that Dr Nelms has given us, but my idea, expressed last night at the meeting was that some times we local men, county society groups, take ourselves too seriously. We think that it is our duty to regulate all the legislation that is presented and determine what should be passed and what should not be passed whereas I feel that if we left most of that to the state committee who are in a better position to judge it, than we are, except certain measures that may affect us locally, and concentrate more particularly on the individual legislators in our dis-

trict, I think that is the essential work which the local legislative committee can and should perform. Dr Lawrence, of course, cannot do that, but those of us who live in the counties know who the legislators are. I know two or three years ago in my society we had a very pretentious program. We started out with questionnaires and so on and so forth, but we didn't get very far. In fact, I think we did more to impede than to assist in legislative matters by that particular program. We have since discontinued it and concentrated on the individual work with the legislators.

DR. LAWRENCE You are not legislative chairmen, you are the secretaries of the county societies. You can, however, assume the responsibility of making certain that you have a legislative chairman in your county and that he has a committee, the personnel of which we should know. You know we send the bulletins to the members, not only to the chairman but to the members of the committee, each member. In some instances the chairman of the county committee prefers not to have the members of his committee receive the bulletins. That is only true in two or three instances, but we would like to know the names and addresses of the members of the legislative committee so that we can send our bulletin immediately when we begin to send them out, which is about the first or second week in January. We will keep you informed, I mean, we will keep your committees informed. We can add to that bulletin, too, for that matter, other members of your county society if you think that your chairman would like to have them receive the bulletins. We also send the bills to the chairman. We don't usually send those to the members of the committee, because they are a little difficult to get, and after all we send them to the chairman with the analysis that we prepare, and we expect and receive comments from the chairman. You know that your chairman is one of an advisory committee of sixty members that Dr Nelms' committee depends a great deal upon. You heard him say that with regard to this bill on anesthesia administration. He referred to our files to see what comments we had received on that bill two years ago. Our files are very complete. We have comments there on bills that were introduced ten and fifteen years ago and it keeps us informed. At the same time that information is for your benefit too and for your county chairman. Your county chairman, if he will assume that responsibility, realizing that he is a member of an advisory committee and that we greatly desire—I do, and so does the committee—his assistance and cooperation, you will help the committee very materially.

THE CHAIRMAN Dr Lawrence, would your mind saying a word more on the request that occasionally comes out from you or from your committee for letters to be addressed to a legislator on any particular bill from his home town, home place, and the purpose of those letters?

DR. LAWRENCE Yes, supplementing what Dr Podvin said a minute ago, the most effective

work, after all that is done with any legislator, is that which is done in his immediate community by the people who are voting to support him. Letters sent promiscuously to legislators who are not in your district don't as a rule mean anything. They are passed into the waste-paper basket. The man in the Legislature has gotten there by votes and the people who vote for him are his bread and butter. He has to please them or at least he has to understand how they stand and be in touch with them. So you have your strongest appeal immediately to your man that represents you. But there are times when a man is sympathetic to our work and he may come from a small district but he may be a very powerful man, a man of influence in the Legislature, and he would like to work for us but probably the people on the other side have been more active and he has received many more letters probably or requests or communications or he has requests and communications from very important influential people and he looked at those and then he looks for our support. Many times they will say to me now you think this is all right. You think it is a good measure, but you haven't taken the pains to help me support you. Here I have on my desk, and you can see them, you may read them if you want, these requests for opposition to that measure, or vice versa, and none for it, and he says they are wise to this too, and they come to me and they say, well, you can't very well take a position against us.

THE CHAIRMAN Yes, and these letters should go to the particular man from the particular district and from nowhere else.

DR. LAWRENCE Yes.

THE CHAIRMAN So that he can show them to his opposing people.

DR. FREY, *Queens County* I should like to ask when a bill is introduced which has some medical implication how the attitude of organized medicine in regard to that bill is determined, as to whether we shall endorse or oppose it. I ask that because last winter was a little disconcerting when the members of a New York society went on record as being vigorously opposed to State organized medicine. Do you want to answer that?

DR. NELMS I am not familiar with that attitude. This is my first year as chairman of the committee and I think Dr. Lawrence is in a better position to answer it than I am. I don't mean to pass the buck. I might say this, that in general the committees this year will endeavor to determine the attitude of organized medicine and the particular groups in question. There may be times, however, when certain things have to be left to our judgment. We never know from day to day what is going to be dropped in the box. In the last days of the last session things were quite hectic. The sessions were long. I think one or two lasted all night. I know I left the halls at twelve o'clock and the next morning at seven Dr. Lawrence called me up and said that he had stayed all night, some times it is—well you just can't determine your position

beforehand on a lot of things that somebody else drops in the box. I prefer to hear from Dr. Lawrence.

DR. LAWRENCE The technic is very simple. You have already alluded to it a number of times. The bills are introduced and dropped in the box, as the expression is, and the next morning I have a copy of them. Immediately a copy of that is sent to each member of the legislative committee. If I don't get enough copies on the Hill I have them typed or mimeographed and sent out. So that the committee gets that bill within twenty-four to thirty-six hours from the time it is introduced. Of course action on a bill isn't immediate except in the last couple of days. Then it may happen inside of three or four days. That mention of that bill and its title is reported in the next bulletin and you know we send bulletins the early part of the season weekly. A little later, we send them at two or three days intervals and toward the last they are sent daily, so that the chairmen are informed. Then as soon as that bill is printed, which is the early part of the season, in about a week's time toward the end of the season it is within twenty-four to forty-eight hours. That bill, the printed bill, is sent to the legislative chairman. In the meanwhile I ascertain the origin of the bill, what is back of it, who are back of it, as near as I can on the Hill, and any other additional information, and I give that to the legislative committee. They read the bill and use their judgment. They decide from reading it whether they think it is a good bill or bad and inform me to that effect. In the meanwhile, I get back comments from the county chairmen as to whether they think it is good or bad. The forepart of the season action on any bills introduced early in the session is rarely taken up before Washington's Birthday. We have all that while in which to study these bills. Of course, towards the close of the season action, as Dr. Nelms has indicated, is much more hectic and much more precipitate, but we have this advisory committee of sixty members who report upon the bill and then the regular committee. The regular committee has in addition to that, another advisory committee of ten that they appoint and from these various people the information is received and has the majority of them, I mean. A majority action from them, reports from them indicate the action. Of course there are one or two instances too, where bills have been presented to the executive committee, and the executive committee has taken action and directed the legislative committees how to act upon the bill.

THE CHAIRMAN Ordinarily speaking, you do not have any great doubt, do you?

DR. LAWRENCE No, ordinarily there is no question about the bills, and may I say in that connection too, that a bill such as that optician bill last year and the optometric bill, many of those, when they are sprung on a man, look as though they were much different from what they are. The optometrist bill last year was practically the law. It was just a revision of what is in the law at the present time, except that

they increased their educational requirements. It was really a good measure except they put in one clause which read as though it were going to prevent a physician from fitting his own glasses. That was bad. Then the opticians have no recognition in the law at the present time and they wanted a measure that would give them an opportunity to limit the practice of fitting and filling glasses to persons who were qualified to do it. At the present time any jeweler or anybody can hang out a sign and fit glasses. Now that was an honest effort to bring again an ancillary practice of medicine or an ancillary feature of it under regulation and control, but it wasn't generally understood. The doctors were divided on it, very much divided on it. In certain sections of the state they were wild against the optician bill, and others were very much for it. It became at one time our hottest spot, but it cleared itself up, and I think next year the thing will work out all right. Does that answer your question?

DR. FREY: Thank you, Doctor.

DR. GAUS, *Essex County*: I just want to substantiate what Dr. Lawrence has said in regard to telegrams and the effect on Assemblymen and Senators.

Remarks by Dr. Hambrook, Chairman, Committee on Public Relations: The Public Relations Committee has been in existence over ten years, and during that time certain information has been obtained from conferences and from meetings with other organizations, both official and lay, which have given us a set of precedents which we think are wise in guiding not only our own activities, but the county medical societies. The aim of all these, of course, is to provide the public and each county society with the best possible medical care. The achievement, however, of these facts will depend upon many things. Among those we might mention three as all-important.

First, to create harmony among all medical and public health workers. This I feel is very important. Many times we, as medical men, are inclined to be antagonistic against any organization that takes up anything that savors of preventive medicine. We forget that these people may be animated and undoubtedly are animated by very fine ideals, and instead of criticizing and opposing them, our best procedure should always be to cooperate with them. Let us take the jump in as many cases as we can and institute these things. But if others do institute them and start them, then it would be to our best advantage to cooperate with them, to guide them, and give them the benefit of our knowledge.

Secondly, an important thing to aid the public to recognize what is good practice and good medical service. I don't believe that ever in the history of medicine in this state has it been more important to establish this principle than at the present time. One of our officers has stated that the public can be trusted when properly informed. I believe that it is true in most instances and where so many conflicting ideas are prevalent today regarding State medicine and panel practice, et cetera, the public can be left

to judge as to what is best for them, but we in return must show them exactly what we are doing for them in the way of good medical practice. I believe that in the state of New York this is possibly as widely diverse as in any other state in the union. We should therefore in every way possible inform our medical men by postgraduate work and others of the modern trends of medicine so that the public themselves will realize our importance in the community, by doing that there will be a great deal less danger for them to want to adopt any other form of practice than what we have at the present time.

Thirdly, by stimulating physicians to become active members of public movements, especially movements pertaining to public health or medicine, both curative and preventive. I think that there is a big field in this particular principle, and many avenues are available to us. The civic groups in our respective localities, especially the clubs doing service work all have some form of medical activity as one of their main objectives. I think that we should endeavor to promote our own activities in these organizations. Certainly members of the organizations should be on the health committees and they should be activating forces which will develop the policies which these different lay organizations are undertaking.

The technic, naturally, of putting these principles into operation will depend a good deal upon the county medical society itself. You cannot promulgate a program which will be state-wide and which can work in each county. It must have its local aspects. As Dr. Elliott said in speaking of the insurance work which was done so well in one part because they all knew each other, I think that certainly stands true for activities in our county medical societies. It seems that our local organization and our patients and our friends have a better knowledge of each other than certainly any other portion of the state can have of us. So that therefore the basic need, I should say, is harmony and cooperation between the physicians, represented by county medical societies, and official and unofficial health organizations. Physicians should take a civic interest in public health and medical problems. Wherever public health can be directed by the local physicians, it should be directed, and where it has been started by other activities, lend our cooperation as far as possible.

During the activity of this state committee several years ago, in order to determine what activities were going on in each county society the county groups were asked to take a survey and it was surprising to the members of the state body to find out the amount of work that was accomplished and was being done by the different county societies. In fact, it was informative to the county medical societies' members themselves, and we are this year going to follow-up (so that they will not get rusty) by asking a few simple questions in a letter which will be forwarded to the chairman of the Public Relations Committee. The questions will be about as follows:

1 What has your committee done to help establish a working relationship with the governmental and lay health organizations?

2 Are you cooperating at the present time in any important piece of health work?

3 What educational health activities are occurring in your county?

4 Is the profession assuming a leadership in your county in all health measures?

We have certain definite dictates from the last meeting of the House of Delegates which I will just briefly recite. It has been recommended by the House of Delegates the formation of county health relations councils in each of the counties of the state. The first meeting after the summer recess of the Public Relations Committee will take place tomorrow in New York City and many of the matters which I will refer to today have not been definitely decided or policies adopted.

Secondly, and this is very important and can be brought up here today, it was recommended by the House that a joint meeting of the legal and medical professions by county associations be held once a year. This was thought very advisable for one reason, the increasing number of malpractice actions in the State of New York. We feel from conference and from talks with many of our lawyers that if there were a better understanding between the legal and medical professions many of the contemplated actions would have been stopped in their incipency. By assembling at a meeting in a social way and by letting the lawyers of our respective counties know exactly what we are trying to do and accomplish I think we must establish a relationship which will work to our decided advantage in the future, and this will be communicated in a letter to each of the county groups.

Examination of school children. This was also referred by the House of Delegates. About four years ago the Public Relations Committee in conference with the Education Department and the Health department established this fact, that the Education department was very anxious that the medical doctors make the examination of the school children, provided they make it thoroughly and upon blanks which allow rapid dissemination of the knowledge in the office affected. The trouble has been that many of the doctors have not taken up this matter for various reasons, many of them, apparently without any justification. The examination of the children must be thorough and be honestly done, and that was one of the objections that we had in the beginning, because it was proven that in some instances the doctors had examined a child in their office, one of their patient's children, and without any thorough examination at all had answered the questions satisfactorily, giving a clear bill to the child. That, of course, is not right or fair. But the fact remains that the Education Department of the State of New York would be very anxious to have more and more examinations of the school children performed by the family doctors, provided that they

are done properly and on forms which are supplied by the Education Department.

The sub-committee on the Deaf and Hard of Hearing. Last year two measures were passed by the legislature and signed by the Governor. One of these is of importance to us as medical men, because we are directed to notify the Health department or the Education department of any child who is deaf or hard of hearing so that proper means may be instituted early to correct, if possible, the hard of hearing from becoming worse and to get the deaf child under proper educational facilities. The exact procedure that would be carried out in this has not yet been determined. In the same way from the last House of Delegates reported was the care of children with defective eyesight. Many of you members who attended the House of Delegates meeting will remember that it was recommended by the Public Relations Committee that children who had vision defects greater than 20/30 should be examined by a doctor and quite a discussion took place in the House of Delegates. It seemed as though the matter was not thoroughly understood and it was referred back to this committee. A sub-committee will be named to handle this matter and as soon as the proper procedure is determined you will be notified.

Mention was made before of the JOURNAL as a means of keeping the members informed of the activities of this committee. It has been determined by the Publications Committee that a certain number of pages of the JOURNAL will be devoted to committee activities, and in this way as soon as the committees are in active work their activities will be published in the JOURNAL so that you may read and determine for yourself exactly what has taken place. The committee has not determined yet as to whether they will hold regional conferences as in previous years. I would like an expression of opinion here today as to that. We have tried it first in a small way at our district branch meetings. It didn't seem to work very well, because I believe it detracted from the district branch activity and program itself. Then we next, or the chairman of the committee then divided the state into sections and had sectional meetings at which the members of the Public Relations Committee attended and listened to the problems and tried to give advice. This was not done last year and whether it will be this year will depend entirely on how you may feel about it. I sincerely hope that any county society that wants information on public relations matters at any time will communicate with the chairman or, as was said here today, with the member of the committee nearest to him. In that respect this year I have asked one member of the Public Relations Committee to attend the district branch meeting, the one that will be adjacent to his home, and I am sure that we are always at your call. We will always be glad to cooperate with you in every way possible so that relations will be put on the finest basis in your county. Thank you.

Remarks by Doctor Kaliski, Chairman, Committee on Workmen's Compensation. I am very

glad to have this opportunity of appearing before the Secretaries of the County Societies to talk on the subject of the Workmen's Compensation Amended Act. The amendment really has already produced a great alteration in medical practice in certain parts of the state. I think we can say that in the Metropolitan District, particularly in the five counties, that the act has resulted in distributing medical work among practitioners generally and has undoubtedly increased the quality of medical care rendered to injured workmen. Now since the amendment of the law was brought about largely to effect an improvement in medical care and to provide for the workmen, the injured workmen, not only better medical care but also honest testimony at the hearings of the Department of Labor, I think that the drawing into this work through the amendment of a large number of competent practitioners in the community has had a beneficial effect all around. I think we can say from conditions in the Greater City, for example, that those men who in the past largely controlled this work are not getting as much work as they were getting last year. That effect is already known. Now the committee has been set up and a bureau has been set up to be of service to the various county societies and to the county societies' boards. We want to cooperate. We want to try as far as possible to take off your shoulders those problems which can be solved by the State Committee on Workmen's Compensation and to leave to you those problems and those duties which you must necessarily perform in your local counties. We stand ready to do that and although we have received a large volume of inquiry from various parts of the state, we feel that we probably could be of service to some of the other counties who have not as yet been in touch with us in regard to their problems.

In the limited time at my disposal I shall merely touch on some of the important matters that are facing the committee and the county societies at the present time. One of the first things that I wish to speak about is the fee schedule. The State Committee on Workmen's Compensation has made a determined effort with the Commissioner and with the Industrial Council to have them promulgate for the remainder of the state an unchanged metropolitan fee schedule. We have been successful so far in preventing the Commissioner—or in inducing the Commissioner—that is a better word—in not making the reduction that we feel he intends to do, perhaps in the near future. As you know, the Commissioner, as a result of his conferences with his own council and with various employers' organizations, and carriers, feels that a discount of ten per cent should be allowed those who pay the bills, to communities of 75,000, and a discount of fifteen per cent from the bills of doctors in communities of 35,000 and less, that in all communities of 75,000 and over the metropolitan fee schedule should prevail.

I won't take up your time to tell you how many conferences we have had on this subject. As you know, we did have a conference in

Albany. It was called by the Commissioner. At that conference the county societies turned out in good force and made a good impression upon him in regard to the prevailing rate throughout the state, but in spite of that and based upon, I believe, a fallacious economic argument, the Commissioner feels that, in view of the fact that wages are lower in some of the communities throughout the state, particularly in those of 75,000 and less, that therefore the bills for compensation work should also be lower. As I say, we have at the present time prevented the Commissioner from taking a definite stand in promulgating this schedule, much as we should desire to see the schedule promulgated.

At the last meeting of the Executive Committee of the State Society we recommended that. The five medical members appointed at the suggestion of the President of the State Society he appointed on this Industrial Council of fifteen members the advisory council to the Commissioner of Labor, should take a more determined stand in insisting upon the Commissioner promulgating the metropolitan schedule for the entire state. It is our opinion, based upon some experience, that the promulgation of this fee schedule, this metropolitan fee schedule, for the remainder of the state outside the metropolitan area will not materially increase the cost of medical care.

Now another very important matter that confronts us is the question of the licensing of Roentgenological laboratories. You know the law provides for the licensing of separate laboratories. It also says that these laboratories must be supervised and operated by qualified physicians. It places the licensing of these laboratories squarely on the shoulders of the local county society or its compensation board.

We heard something about dropping bills into the box at the last moment. The Workmen's Compensation amendment called for the only supervising and operation of these laboratories by qualified physicians. Through certain interests at the very last moment on the very last day before the amended act was brought up for a vote, these interests succeeded in scratching out the words "owned" and left in the two words "operated and supervised." At the present time the law reads that such a laboratory shall be operated and supervised by a qualified physician. It leaves the question of ownership open, and in accordance with the ruling by the Attorney-General on this subject the Commissioner has the right to license separate x-ray laboratories owned by laymen or corporations. We have protested. We have submitted a legal brief. At the present time we are faced with the situation where it will probably be necessary for the state society to take legal action to prevent the licensing of these lay-owned or corporate-owned x-ray laboratories.

There are two questions involved there. First, these two questions confront your local county societies. Shall the local county society, for example, license a doctor who it knows is in charge of a lay-owned laboratory? Such a case is now pending before one of the county boards.

SECRETARIES' CONFERENCE

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The county board has not been able to make a decision on the point, because this particular doctor has not made a proper application. When he does, this local county society will refuse to license this doctor, will refuse to qualify him, rather, on the grounds that to do so would be to put him in charge of a laboratory owned by a lay person or a corporation, and this in the opinion of the state society is a violation of the Medical Practice Act. Now whether the amended Workmen's Compensation Law with its provisions to license such laboratories supercedes the educational law of this state is a question that only the courts can decide, and I am glad to say that with the consent of the Executive Committee we are going to bat on this action and will probably either defend an event that the Commissioner licenses such a lay-owned organization. My advice to the local county societies in the event that they receive a request for the granting of a license either to a physician connected with such a lay-owned organization or a request for licensing of a laboratory, that such request be sent to the state society before action be taken by the local county society.

As you know, we contemplate and are now proceeding to insert in the state directory the qualifications of all physicians under the Workmen's Compensation Act. This will be of great help to employers of labor, to the insurance companies, and to various state organizations in enabling them to determine whether a doctor has been qualified under the law, and, if qualified, what his qualifications are.

The Journal Committee has ruled that in order to make the procedure feasible the county societies cut down the designations that they gave to physicians. We are not criticizing the county societies, because this work had to be done in great haste without much experience at the beginning, but we have asked them to cut down these designations to a maximum of six letters.

The vast majority of the county societies have already done this and have simplified their classifications. A number of the county societies have not yet sent in their completely revised lists or, if they have sent in lists, they haven't given us the names of the physicians who can qualify or who have been qualified in the last two or three months. I believe the Directory is going to press within the next few weeks and I urge the secretaries of the county societies or the chairmen of the boards, Workmen's Compensation Boards of the county societies, to let us have the lists at the earliest possible moment. This is a new departure. It is a new field and we hope that there will be as few mistakes as possible. But if there are mistakes I am sure you will all bear with us because the work of compiling this directory has been a very great burden on the Journal Committee.

I am happy to be able to report that we are now ready with the plans and procedures for arbitration. We have met over a period of a number of months with the insurance carriers and representatives of the Department of Labor,

particularly of the Industrial Council, and have set up an arbitration procedure that we believe will enforce the payment of a doctor's bill. As you know if you read the law carefully you will find that there is no way, once the doctor has had his bill O.K.'d by a carrier or employer, of enforcing the payment of the bill. A case that goes to arbitration carries with it a means of enforcing the payment of the bill. In other words, by setting-up the arbitration proceedings in a legal fashion we have done this with the help of the American Arbitration Association, the award of the arbitrators becomes a legal paper that can be entered in the court as a judgment and can be enforced against the employer or carrier.

The question has arisen whether arbitration proceedings can be started in counties outside the metropolitan district in view of the fact that there is as yet no official fee schedule for those counties. I believe that arbitration may begin, and that the cases may be arbitrated on the basis of the prevailing rate until such time as the metropolitan schedule or other schedule is brought into being for the remainder of the state. I believe that this will immediately clear the calendar of a large number of cases that are pending throughout the state in regard to the fairness of the bill and, secondly, for actions on lifting. We arbitrate the two things. We arbitrate on the question of the fairness of the amount of the doctor's bill. We also have a right to arbitrate if a doctor believes that a case has been improperly lifted from him either by an employer, an insurance carrier or anyone else. We will provide the forms necessary before the setting up of arbitration and for the submission of these cases to arbitration where the doctor believes his case has been improperly lifted from him. There is a very ticklish situation that we have had to deal with from the very inception of the passage of the law, namely, a discussion of this problem in detail at the time. We have had numerous conferences with the hospitals on the question of the relation of the hospital to the doctor in regard to Workmen's Compensation but this is only one phase of a very complicated problem, the relationship of the doctor to the hospital in many aspects. We feel that the setting up of a special committee by the President of the Society will enable us, among other things, to bring about such relationships with the hospitals that we may be able to solve, among the other problems that confront us, the problems of the relation of the doctor and the hospital in regard to Workmen's Compensation.

A question has arisen as to whether the state society should undertake to print the forms, the doctor must submit when he accepts a case under the act. This is the function of the Department of Labor without a question. The Department of Labor should provide physicians with the necessary forms to make the necessary reports. We understand that the Department of Labor is reluctant to provide these forms in quantities necessary not only to the doctor who uses an occasional form but to those physicians

who do a large amount of industrial work, and the question now arises as to whether the state society should print these forms and sell them to the doctors at cost or slightly above cost or whether we should insist upon the Department of Labor printing the forms as provided in the law. It is a question of policy here, whether we should stand upon our rights in a matter of this sort, which is perhaps a minor matter, in order to gain good will as the result of a gesture, let us say.

Now there are many other questions that no doubt occur to you that I should speak about, but I believe the time allotted to me is drawing to a close and I would rather answer questions than make a speech. I feel that in spite of the amount of work that has developed upon the committee in the past year and a half that under the circumstances we have done as good a job as possible with the cooperation that we have received from the county societies throughout the state. There has been a surprising lack of friction. There has been uniformity of action and of thought along practically all lines with the possible exception of the fee schedule, and even there I believe that we have done as much as could possibly have been done under the difficult situations that arose and had to be met as emergency situations.

DR. DI NATALE Our county society has asked me to take up this point. One of our doctors is charging a company with lifting a case. I have written to Doctor Kaliski about this, and I wish he would briefly describe the procedure that we are to follow and also whether or not that company or the employer is allowed an attorney and whether he can cross-examine the doctor and the board, and who pays the expenses of the hearing.

DR. KALISKI Under the law a case of lifting must go before an arbitration committee. The doctor will make an application to have his case heard by his county society on a form that will be provided.

DR. DI NATALE Who provides the form?

DR. KALISKI We will provide the forms. Thereupon the company will be notified of the demand for arbitration of this case and the grounds will be given. Then an arbitration committee will be set up consisting, and this is according to law, of two physicians qualified under the Workmen's Compensation Act, designated by the President of the County Society, two physicians designated by the carrier, and these four physicians will meet as an arbitration board, will give the doctor an opportunity to be heard, to present any witnesses that he may wish to present. The carrier or employer will be granted the same privilege.

The question of counsel has been discussed. We haven't stressed it, but where counsel is required, is demanded, counsel may be permitted to appear. The proceedings will not be according to legal formula necessarily. The ordinary rules of evidence need not apply. In other words, the four arbitrators may carry out any procedure that they see fit in order to determine and render justice in the particular action. The four arbitrators will hear all the evidence, will retire, and decide the case. If they cannot agree, then

they must call on a fifth man. They must decide upon a fifth man, also a member of the state society. He may, if he so desires, reopen the case and hear additional evidence, or he may decide on the evidence submitted at the hearing, and his judgment is final. That is the procedure.

The arbitrators are paid a fee of \$10 each, this to come out of a fund collected from a discount or a charge of five per cent on the award rendered in every bill arbitrated. Does that answer the question?

DR. DI NATALE Yes and no. Mr. Hugh Murphy in receiving the same request stated that this case of lifting goes to the Compensation Board first to decide whether or not lifting has taken place.

DR. KALISKI I am sorry to disagree with Mr. Murphy but I can assure you that he is wrong. The Compensation Board of the County Society?

DR. DI NATALE Of the county society.

DR. KALISKI I must also disagree. The doctor has a right to begin an action for lifting and it is decided by arbitration and not by the county board. The county board may suggest to the doctor, after an investigation, that he probably has no grounds on which to begin a lifting action, but the doctor, a qualified doctor, has a right to a procedure by arbitration. That is the law.

DR. DI NATALE Well, there is no bill to be arbitrated.

DR. KALISKI The penalty for lifting is either the full amount that the doctor who succeeded the doctor who claims lifting got or any such part of that amount as the arbitrators may think sufficient.

DR. DI NATALE This doctor first wants to get the board to state that the case was lifted and then wants the bill arbitrated after that.

DR. KALISKI I have given you the procedure. Doctor, it is undoubtedly true that the board has a right to make an investigation for itself and find out the facts in the case as far as possible.

DR. DI NATALE Whether the case was lifted or not?

DR. KALISKI Whether the case was actually lifted or not, but that isn't binding on the doctor. The doctor has the right under the law to begin a lifting action and that action must be carried out in the way I have described. You can probably dissuade him if you think he has no grounds but that is his right under the law.

DR. DI NATALE We don't want to dissuade him at all.

DR. MASLON, Warren County Complying with Dr. Kaliski's and your request to send in the list of abbreviated symbols of the Workmen's Compensation Act to your department, is it necessary for us to send that same abbreviated list to the State Department?

DR. KALISKI I am glad the Doctor brought that up because if the county society will so notify us we will be very glad to submit the list to the Commission. Some county societies have sent the list to the Commissioner and a duplicate to us. Where the county society

simply sends in one list, if they will so notify us, we will send a duplicate list to the Commission.

This gives me an opportunity to read off the list of counties from whom we have not yet heard in regard to the simplification of the symbols. Perhaps some of these counties have in the last few days sent in their simplified list. These counties, Cattaraugus, Clinton, Genesee, Cayuga, a few in Chautauqua, Chemung, Franklin and Livingston, Niagara and Ontario, Orleans and Otsego, Albany, Broome, Rockland County, Saratoga, a few in St. Lawrence, and a list that hasn't been revised so far as we know from Sullivan and Wyoming. The idea of course was to correct the codification begun by the county societies under the belief that a physician should be granted every symbol, every letter, in which he said he had any qualification, but it has been found that it is not necessary to give the average physician more than X or if he has some more experience in minor surgery, XM-5. That is the average practicing physician. Where a physician possesses more than the average ability in a given specialty, for example, if a man who is doing general practice is also doing some eye work or some skin work, or perhaps has a position in a clinic or in a hospital but is not specializing in that subject, such an individual may be qualified in addition to the X in that particular symbol. Some of the county societies in the beginning gave physicians as many as six or eight or even more symbols and it has been found unnecessary and impractical to include such a long list in the Directory, and I hope that these records will be corrected as soon as possible, because as I said before, the Directory is going to press very shortly.

DR. WHITE, *Cortland County*. I want to ask this for the benefit of a dentist in our hospital. He doesn't seem to be able to be classified under oral surgery and I would like to ask whether or not that can be done or just who an oral surgeon would be.

DR. KALISKI. Under the amended act dentists are not included. In other words, a patient has not the right of free choice insofar as a dentist is concerned. The only oral surgeons who have been included in our list are those in possession of a medical degree. Dentists may now accept compensation cases if they are referred to him or if they go to him. He must, however, get authorization in order to be paid for his services.

DR. GAUS, *Essex County*. The question arose in regard to the insurance company sending out letters in which the law was quoted. Following their statement they inserted a paragraph which said "Of course, we are very anxious to furnish the very best medical attention to our clients and therefore, if they have no choice, you should send the patient to Doctor so and so or Doctor so and so." That has arisen in our county and a couple of the doctors are on the warpath. They reproached the committee and said that we were responsible for it, and they have been circulating it around. I asked them to write a complaint and they said they would settle it in their own fashion. I want to know what the law is.

DR. KALISKI. The question has arisen as to the right of an insurance carrier to send out a list of qualified physicians to employers. The Industrial Council has ruled against the posting of any notice containing the names of physicians in any industrial establishment or office covered by the Workmen's Compensation Act. The Medical Society has taken the position that the carriers should not send to their insured the names of qualified physicians whom the insured or the employer might call upon in case of the waiver of right by the patient of free choice. Some of the insurance companies have contested this ruling and I believe that the Industrial Council will either next week or the week thereafter or the week after that take up this question again. We feel that it is contrary to the spirit of the law for the insurance carrier to notify an employer of designated physicians who are competent to do work under the amended act. We have taken the position that if the employer so desire the State Society and the county societies will combine and issue to employers of labor in this state a list of physicians arranged in accordance with definite localities. Of course, this will be a very big job in the big cities, but we are ready to do that. By the preparation of this list for the Directory already now in possession of the districted list of physicians, the society has taken the position that it should be given the opportunity to give any employer who desires a list, a list of physicians in the locality or in the community if the community is a small one, thereby not playing any favorites.

THE CHAIRMAN. In other words, a complete list?

DR. KALISKI. A complete list. The company, as I said, is contesting this viewpoint, claiming that under the law the employer has an obligation to provide medical care where the employee waives his right to free choice. Now there is another way to handle the situation and that is the way I believe that the local county societies may handle the situation in case the ruling is adverse, and it has been successful in some counties. The sending out of a list of physicians by an insurance carrier not to be posted but to be kept by a foreman or by a member of the firm is, I believe, a violation of the solicitation act. A physician whose name is on such a list may be notified and advised to have his name withdrawn from such lists. We have done that in New York County and it has been quite successful. The doctors in some instances did not know that their names were on these lists sent out by certain carriers. They advised the carriers to remove their names because they were in fear of the penalty provided in the law for solicitation.

DR. LEWIS, *Livingston County*. I have been asked to raise this question. What should be the procedure when a physician finds that a certain industrial plant persists in specifying to their employees one or more physicians in the community?

DR. KALISKI. Before or at the time?

DR. LEWIS. At the time of the accident.

DR. KALISKI The insurance carriers through their attorneys have taken the stand that it is the obligation of an employer to see that the injured employee gets proper medical care and they claim that when an employee is injured they have a right to point out to him, as the law does in that placard that is issued to every insured person, that the patient first has the right of free choice. He may select his own doctor, but if he refuses or doesn't desire to select his own doctor that under the law it is the employer's obligation to do so and therefore they say that the employer has the right to recommend. Now there is a very close line between recommendation and intimidation. In New York County, in the New York area at any rate, a number of insurance carriers have been hailed before the Industrial Council and asked to explain their action in regard to this procedure. I believe that we would have to handle each case on the merits. If a large industrial organization is attempting to intimidate its employees into calling on their selected doctors, I believe that the local county society should make an effort to cite such an organization and the Industrial Commissioner will call a hearing and the matter will be looked into.

DR. LEWIS In our particular instance the patient was directed to go to the office of another doctor, not an emergency that called for immediate attention, but a minor injury, and he was directed to go to the office of either Dr. A or Dr. B.

DR. KALISKI What was his desire?

DR. LEWIS He wasn't asked. He went to his own physician who was not one of those specified and signed the statement that he had been instructed to go to one or the other of these physicians.

THE CHAIRMAN By implication his desire was to go to his own doctor.

DR. KALISKI Of course, we have to depend upon the individual too to help enforce the law. The employer probably was trying to intimidate that patient, but the patient exercised his own right of free choice. In the event that such employee is discharged, as often happens, from his employment because of the fact that he did not visit the doctor selected by the employer, I feel that such a case should be brought to the attention of the Department of Labor. There is a penalty under the Labor Law for intimidation under the general Labor Law, not in the amendment.

THE CHAIRMAN Do you not think, Dr. Kaliski, that this particular instance should be brought up?

DR. KALISKI Yes, I think this particular instance should be, but I think that often the statement of an employee has to be investigated before action is taken. Many such cases have been investigated, but very few have stood the test of investigation.

THE CHAIRMAN And the investigating is the part of the Compensation Board?

DR. KALISKI The local county board.

DR. LESTER I wish to ask Dr. Kaliski if

there is any geographical limit on the desire of a patient to have his own doctor, like county limit or village or city or town limits. A case like this came up. A man in a neighboring city to Seneca Falls, where I live, sixteen miles away, was employed in a large firm and received a hernia. He desired to have a doctor in Seneca Falls do the operation and specified that, which was finally done, very much against the will of the company, but it was granted, because he made the specified reason. Now that is another county, that is, crossing a county line. Is there any geographical limit?

DR. KALISKI There is no geographical limit. A patient has the right to select his own physician and within reasonable limits to change his physician, and the law says for any cause under rules and regulations prescribed by the Commissioner. In a question like that, there isn't much at stake, but it might very well result in complications. For example, a patient in a small community might have a minor injury and might feel that he wanted to go to a doctor thirty or forty or fifty miles away, might want to be reimbursed for travelling to that place or, on the other hand, he might call a physician from a distance and expect, and the physician might expect to be reimbursed for travelling an unusual distance to the patient. Now that would become a matter for arbitration undoubtedly, because the companies would object to paying a doctor from New York City, let us say, to go up to Poughkeepsie to see a patient. I believe that under the Labor Law and under the rules and regulations prescribed by the Commissioner that sort of thing would not be tolerated. A physician would have difficulty in collecting bills under those circumstances, except in emergency, of course. I feel that while a patient may go from one county to another he would not be permitted to go from one county to another or to call a physician from an adjoining county, which would result in increasing the cost of medical care inordinately, and that is an exceedingly important point. We stand to lose as much by the inordinate increase in the cost of medical care as the carriers do if it is found that as a result of a year or two of the operation of this new amendment the cost of medical care goes up to an extraordinary extent and I am quite sure that if that happens there will be an amendment in the law which will be to our disadvantage.

THE CHAIRMAN Doctor Lester, I would like to ask you a question. Did this imply any extra cost to the insurance company?

DR. LESTER No, sir, because the patient was a resident of Seneca Falls and worked in Auburn.

DR. KALISKI I don't think there would be any question about that case.

THE CHAIRMAN I asked that question because it pulls the trigger on my own particular hobby, which is that the intimate personal relationship of doctor and patient is of more value than most people give it credit even in surgery. This man had a sense of confidence in going to his own doctor, his own surgeon, didn't he?

DR. LESTER Yes

THE CHAIRMAN Real confidence is worth a great deal

DR. KALISKI I think we have to look at this from a practical standpoint. I quite agree that a patient ought to be allowed free choice of a physician, but where somebody else is paying the bill I think we have to use common sense in the exercise of that free choice. On the whole it is found that the patient is not exercising the right of free choice to the extent that we would desire that he exercise that right. We are attempting to educate the public to the point of making them cognizant of the new law, the full effect of the new law on medical care, but at the present time we find that too many patients are waiving their right of free choice and willingly and gladly going to a physician selected by the employer

THE CHAIRMAN I won't crowd the point but I think it is interesting Any more questions, gentlemen?

DR. SUTTON, *Onondaga County* I want to ask under the circumstances about supplying the carriers with lists of qualified physicians with their accompanying symbols if they request them.

DR. KALISKI That is the reason we are doing this in the Directory. We had hoped to make some little revenue for the state society by the issuance of a complete list of qualified physicians for the entire state and to render the employers or companies an additional service by keeping the list up to date and to charge them for this service. We ascertained that a certain company last year offered to render this service at the rate of about \$50 a thousand names per year and to keep the service up to date. In other words, to make additions to the list as they were made by the county societies or changes in the list and to keep every industrial organization up to date on the list. We are in process of trying to negotiate this. I think that there is no reason why the county society should not make available to anybody who desires a list the names of all the physicians in the county who are qualified to render medical care under the new act.

DR. KALISKI May I say one further word? The question was brought up by Dr. Nelms. It is an important point and I would like to take a moment to consider it. That is the question of the amendment to the Workmen's Compensation Law. Under the old law the Industrial Board of the Department of Labor had the right to assess the cost of medical care and compensation against a non-insured employer. A great many non-insured employers are in business in the State of New York. Many employers allow their insurance policies to lapse. When injuries occur doctors treat the patients who are injured and find eventually that the risk is not covered by insurance. Under the amended act the Industrial Board has not the right or the power to assess the cost except in a case treated outside of the State or injured outside of the State covered

in the act. In other words, if a physician in New Jersey treats a case under the Workmen's Compensation Act the Industrial Board at the present time has the right to assess the costs against that employer if he is not insured and even if he is insured he has the right to do that under the present law. At the present time we are constantly receiving requests from doctors to get the name of the insurance carrier of a given employer. We ascertain that the reason that the employer doesn't give the name is that he is not insured. The only power that the Department of Labor has under the new law is the same power they had under the old law, namely, to proceed criminally under the Labor Law against such an employer for not being insured. He may be fined as much as \$500 and sentenced to prison. A number of such individuals were sent to prison in the last few months in New York City, but at the present time they have no way of assessing the cost of that against such an uninsured employer. This amendment is drawn up with the idea of giving the Industrial Board that power and I believe it is a good amendment. We are not anxious to have any amendments to this act for the fear that interested parties may slip in some other amendments not to our liking, but I believe this amendment is absolutely necessary.

(Dr. Lawrence called the roll of Secretaries and thirty-nine responded, this later being increased to a total of forty)

AFTERNOON SESSION

Address by the President

DR. WINSLOW, *Rochester* It has been my experience that the president of the county society takes a bow for a lot of good work that has been done by the secretary, and incidentally that also applies to the state society.

I will now try to just briefly discuss some of the current features of the work of the state society which are of most interest, although I realize that to a certain extent this is a repetition. I suppose probably the outstanding piece of work in which you are interested today is the question of pneumonia control. As a matter of fact, the study of pneumonia control started in the year 1917, nineteen years ago, and was a joint project of the state health department and the Rockefeller Institute. At that time our Dr. Lawrence was interested in the work of the state department and he presented to the county society the initial work which was done in the investigation of the cause of bacterial pneumonia, its typing, and an effort was made and was later successfully accomplished to bring out a curative serum.

The next matter in which you are interested is the question of syphilis control and that, as you all know, the Surgeon General of the United States, our own Dr. Parran, has recently made an appeal from the Federal authorities for the cooperation of not only the citizens but the medical men of the United States in an effort to prevent and wipe out syphilis, and that matter is of much interest to the medical society of the State of New York today. At the present time a sub-committee of the Committee

on Public Health is interested in and starting a campaign in an effort to wipe out syphilis. An announcement was made by one of the prominent lay agencies comparatively recently in which, in a letter which they sent out, they indicated that this lay agency practically intended to take over the control of cancer in New York State. That apparently has been tried before and it probably will be tried this time with no more success than accompanied it before. As a sort of an offset to that situation the Public Health Committee has appointed a sub-committee on cancer of which Dr. E. G. Whipple of Rochester is the chairman, and they intend to participate with the State Health Department in whatever effort is made along the directions of cancer investigation.

One of the other important matters under prosecution at the present time is the question of maternal welfare. You all know that some of the recent statistics have been rather appalling. An exactly similar action has been taken by the state society. A sub-committee of the Committee on Public Health headed by Dr. Quigley now has control of this work and is laying their plans for an efficient campaign which will be conducted during the coming year.

The next subject in which we are all deeply interested is the question of the JOURNAL of the Medical Society of the State of New York and that will be handled by Secretary Irving when he speaks directly following my talk.

As you heard from our very adroit and efficient Chairman of our Economics Committee, one of the things that confront the medical man in America today is the question of the political situation, and while we are essentially medical men and thereby barred from taking any public attitude in politics, we all still have our personal liberty which we more or less like to preserve. As you probably know, one of the senators from the State of New York has stated that if the present political regime is restored to power, one of their first acts will be the adoption of the Social Security plan including compulsory health insurance. Right here arises a question that makes you somewhat doubtful as to the power and the efficiency of organized medicine. The facts are, gentlemen, that of the physicians in the United States by and large there is just exactly one out of three that is sufficiently interested in exercising his elective franchise to go to the polls each November. Only thirty per cent of the doctors in America are so interested in this matter that they vote. It therefore behooves us to consider this situation with exceeding seriousness and to govern ourselves accordingly. Of course such a situation is fraught with imminent peril because the minute that the doctor steps from his position as a medical man over into politics there are many kinds of dangers which beset him. So it requires supreme judgment to act correctly in that situation.

As you also heard from our Chairman of Economics, one of the situations which face us is the question of our relations with the hospitals. It is a perfectly obvious situation that no hospital can exist without doctors. It is almost equally true that the doctor has to have

the hospital. I have talked with some of the authorities in the New York State Hospital Association and they are very frank and very square in admitting that during the stress of the recent economic crisis some things have crept into the hospital practice which they deeply regret and which they feel are not quite right, and they welcome the opportunity of sitting down with duly appointed committees of doctors and discussing these problems in a constructive effort to solve them. I believe that during the coming year we will reach an amicable settlement of a large percentage of the problems which today affect jointly the hospital and the doctor.

I suppose no good speech could be complete without making constructive suggestions as to how to conduct yourselves. I had a little shiver run down my spine just before the meeting when one doctor walked up to me and said he had been a member of a state society forty years and secretary of the county society for thirty years and I am pretty skeptical that I could tell him very much about how to conduct himself. However, if I may point out some suggestions I would like to take up four things.

One, the matter of records. I suppose a county society secretary gets fed up on the matter of keeping records. At the same time there are numerous occasions that arise when the well-kept records of the county society are of very great importance to our headquarters in New York City and we appreciate the fact that in the main you keep good records and urge that if possible even a better job could be done in this direction. One way you can be helpful is this. With the incoming administration each time please see to it that the committees are appointed promptly, that there won't be any lapse between the two administrations, and as soon as committees are appointed, please see to it that the names of the chairmen of the committees at least and the names of the members, if possible, are reported to our headquarters in New York.

The second is the question of membership. Last year the American Medical Association increased their membership by 2,000 men and of the 2,000 additional memberships in the American Medical Association, much to our pride, 1,000 of them came from New York State. That means that New York added as many members to the American Medical Association as all other states combined last year. It is also quite obvious that within the districts from which you come there will be some physicians whose membership in your society may be undesirable. However, I beseech you to see if possible that a membership committee is appointed in each county society whose duty it will be to canvass the physicians who practice in that community and to secure from them the applications of those who are desirable, which may be added to the list of membership in the state society.

The third point I wish to emphasize is the desirability of your close contact with our headquarters in both New York City and Albany. There are many things that come up which make it helpful in both ways, both to the head-

quarters and to you, in arranging the programs for your society. You can receive almost invaluable aid either from our Bureau of Public Relations headed by Mr. Dwight Anderson, from the Committee of Trends, headed by Dr. Townsend, from our Secretary, Dr. Irving, or Executive Officer, Dr. Lawrence. They also profit by knowing what your programs are. So, conversely it is equally interesting for you to send to them the details of each one of your society meetings. Another exceedingly important function of the state society at the present time is the postgraduate lectures. These are under control of the Public Health Committee headed by Dr. Farmer, and in case you desire any information in connection with holding such a course he will be more than glad to communicate with you.

The fourth and probably the most important matter of interest is the question of attendance at this meeting. The efficiency of the work of each county society in the state has been greatly facilitated since these meetings have been held. I am sure that this is the most helpful one that has been held. The work is very much appreciated here and it is bound to advance the interests of the society.

Gentlemen, the ability of the Medical Society of the State of New York to form an efficient program is dependent upon the interest and the support which it receives from the officers and the members of its county societies. I congratulate you upon your attendance today, upon the interest which you show in your work, and I hope that you will pass the word around so that next year you will have even a larger percentage of attendance. And as you go from here I hope you will bear in your minds three things.

First, I hope you will go forth fully sensitized to the desirability of the advancement of the projects which are discussed here today.

Second, I hope that you bear very deeply in your minds the desirability of being dissatisfied with any secondary accomplishments either in your personal efforts as secretaries or in the efforts of your societies.

Third and last, I hope that you will fully realize the importance which rests upon a realization of a physician that it is his duty to give to the citizens of New York State the utmost, the very best medical care. Thank you.

REMARKS OF DR. IRVING, *Secretary*. For the first time in the last three years, I have felt free to give the JOURNAL a bit of a boost in speech. If I may be a little personal for the moment, the daily running of it fell into my lap without my seeking it at all some two and a half years ago, and my first sensation was that I was quite adolescent. It was like running a school paper in a prep school. Nevertheless we went to work and we have gradually increased the magazine in size. You had ninety-six pages during the summer. This last issue was 128. The next will be the same and on the first of October it will be 160 pages. That is going to make it possible for us to open up a lot more news features, news that covers a great many things in which the doctors are

all interested such as hospital news, medical school news, and to give to each one of these major items a heading at the top of the page, so that you can find them in successive numbers. I feel very much encouraged over the outlook for the JOURNAL.

The hooking-up of the county societies and the State society is partly accomplished through our column known as Medical News. It comprises news not only of county societies' activities from the county societies but also of other news that comes from that locality. We have never found yet a very satisfactory way to fill that particular column. At first we tried to get it from the secretaries individually and a few came across very nicely, but in the main there wasn't very much to be gotten. We very early decided we couldn't publish minutes as minutes. They are very dry and do not mean much except for reference. They can, however, be put in narrative form very often and be quite interesting.

Then we found a way to get more news from newspaper clippings, written by newspaper reporters. They had a news value, in news form, but they have a great defect in that they are inaccurate, and it is difficult for us to check on those inaccuracies, and sometimes we have funny little mistakes and errors that come out in the JOURNAL, and we can only regret them. I think that if all the county societies represented here, and I hope all the rest of them, would establish the custom of sending either directly to me—I should say preferably now directly to me rather than to the JOURNAL office, as you have been asked, a few of you, to do lately—directly to me at the State Society office, it will serve two purposes. Not only will it give us more information from the county societies for the JOURNAL but it will also help to accomplish an ambition that I have had in the back of my mind for some years. That is a closer knowledge of the problems of the county societies in the State office. That fits with coordination of effort and action between the sovereign units, the county societies, and the State Society that sits in a position of helping. So that I hope you will take that back from this particular meeting, all of you, and I hope that we will see enough of each other in the coming years so that we can make that even more useful.

DR. LESTER. That is 2 East 103 Street?

THE CHAIRMAN. Correct. There are many complaints that will come into the JOURNAL. One gets them from time to time. Why did you print that? What do you mean by printing this? I don't object to that. It proves to me one thing beyond all others, that the men are reading.

(Dr. Townsend, chairman of the Committee on Trends then described the work of his committee and Mr. Anderson, Director of Public Relations of the State Society, amplified with details. This portion of the remarks is on file in the Secretary's office.)

Remarks by Dr. Mitchell, Chairman, Committee on Revision of Constitution and By-laws. I won't detain you long, because I know

you are very tired or worse, and you are probably anxious to get through with today's activities. In these days with our compact society it seems as if a great many minds are turning to the question of the revision of instruments that we call constitutions, and I wouldn't be surprised that future historians might call this a sort of an era of constitutional monkey business. So it isn't surprising that we have called to our attention that we should give some thought to our constitution and by-laws, whether or not we might better in some way the management of our organization.

Last year a special committee advised Dr Gordon Heyd and studied the constitution and by-laws, the question of consolidation of executive offices, and reported to the House of Delegates. The report is to be found in the JOURNAL of June 15, 1936, Section 9 and 71 on the consolidation of executive offices. If you have not read that, I think you should do so and study it very carefully.

As a result of that report, the House of Delegates appointed another special committee, of which I happen to be the Chairman, known as the Committee for the Revision of Constitution and By-Laws. We haven't any set ideas as to just what we are going to recommend. There are a considerable number of recommendations in this original report. We will study these, and will listen to suggestions from members of the society from all parts of the State. I can assure you that we will not do anything radical. We will not do anything unless the majority of the members of the society want the changes to be made. And so we are busying ourselves with that investigation and study.

The members of the committee are Doctors Goodrich, Cunningham, O'Gorman, Mott, and myself. Of course, we are consulting with other officers and various individuals of the Medical Society and in various parts of the State.

Let me ask that you read what is in the JOURNAL as a part of the minutes of the House of Delegates. Go over it carefully. If you care to, give us some suggestions which may prove to be very helpful. Don't hesitate to do so. We will welcome them and get in touch either with the Chairman or any member of the committee or if you want to send to Dr Irving or anybody else, so that they will eventually clear through our committee. We hope to be able after studying and working at this problem, to submit a report at the next meeting of the House of Delegates, making some suggestions or perhaps quite a complete outline of what we think should constitute the constitution and by-laws of the Medical Society of the State of New York. Thank you.

DISCUSSION

DR. ROONEY. I am very interested to hear the report of Dr Mitchell, particularly because I think that it is one of the most important committees that this society has constituted within the last fifteen to eighteen years. If all of us will recall certain of the proposals

that were made by the Committee on Reorganization of the State Society and they were, to say the least, in my opinion, startling, because they practically converted the society over from a democratic body ruled by the House of Delegates to, essentially, a rule by a group of officers with long terms of office and very difficult to displace. In effect, the large controlling committee was to be composed, essentially, of men whose terms of office ran for three to five years and approximately a little over a majority of that group were not elected. The House of Delegates was converted or would be converted by that sort of plan nearly to the very present position of the present German Reichstag. Now I am more than pleased to hear Dr Mitchell say that he wants to have suggestions and proposals from all of the various members who are interested in this, and I think we all must be interested, and I merely wish to offer this suggestion, having been a member of the last Committee on By-Laws, the last Committee on Revision of the Constitution and By-Laws, of which to the best of my recollection Dr Heyd was Chairman and I was Secretary, and we held hearings. We held three hearings throughout the State in the various districts. During the course of those hearings, the members and societies had the opportunity of coming before the Committee and presenting their recommendations completely, not merely by letters or indiscriminately, but these hearings were held far enough in advance so that any member or officer of the society who desired to make certain recommendations to the Committee would have the opportunity of doing it *viva voce*. I think that at least, and I am expressing merely my own opinion, that I am entirely in concurrence with what Dr Mitchell has just said about the fact that we are in an epidemic of monkey business about constitutions and by-laws and government. Really we are becoming, and I am in hope that the profession will not be infected by it, the whole world apparently seems to be like a group of monkeys in a cage, long-tailed monkeys, each successive one holding on to the tail of the preceding one, finally constituting a complete circle, and all of them going through a very lovely, beautiful dance and mistaking motion for progress.

Now it seems to me that it is about time for us to sit down, take thought about just exactly what we want to do about this constitution and these by-laws, which it seems to me have worked very well, except for minor changes perhaps that have to be made evolutionary. To make a complete change in the status of the representative government of this profession, convert it into a sort of Fascism or oligarchy or whatnot, it seems to me at least is not called for. I present these to you because I feel very keenly about it. I feel that it is one of the ways that the profession will not evolve but will retrograde and it is of course a part of the scheme of the times, not alone abroad but also in America and I think it is like many others, the other schemes of government, the proposals for changes in government, which historically are not new, are not forward looking, but in every

instance are retrograde to the primary thought of tribal savage Communism

THE CHAIRMAN If I remember the minutes of the House of Delegates correctly the Reference Committee advised that such hearings be held. Dr Lawrence, have you anything more to say?

DR. LAWRENCE May I be permitted to express my appreciation of the cooperation that I have had with the Secretaries, and also to congratulate you, Mr Chairman, upon the great turnout that we have had today. This is the best turnout of Secretaries we have ever had in the years that I have been connected with the Society. We have tried hard and I believe that it indicates that there is a more lively interest from the county societies in the county societies, than ever before.

May I ask now that in support of what Dr

Irving has said to you that when you need assistance you have two offices, one in New York City, and the other in Albany? Don't hesitate to write to either of us to help in any way we can. Dr Irving and I are both going to visit the county societies as much as we can. We want to do all we can to encourage and develop the individual county societies. We have seen its effectiveness in our legislative work and it can be just as effective in our public health work, economic work, and other fields that are yet to be developed, and especially too now that we have this very efficient agency, our Public Relations Bureau. Don't hesitate at all to give us an opportunity to be of assistance where we can.

THE CHAIRMAN Gentlemen, the wheels are greased. Whatever you tell Dr Lawrence he will tell me, and whatever you tell me I will tell him.

WORKS PROGRESS ADMINISTRATION—INFORMATION

Announcement by The Committee on Economics

Physicians of the State are advised by Mr C M Whipple, State Compensation Officer of Works Progress Administration, that bills and reports of the care of injured W.P.A. workmen should be mailed to the office from which the authorization originates and not to Washington. Communications sent to Washington, particularly the initial reports, will occasion a search for previous records and a long delay and perhaps the record is lost, whereas if it is sent directly to the local office the administrative handling of the case should proceed without delay or fault.

Until further notice the attention of the medical profession is directed to the fact that the Works Progress Administration requires a report from the physician every two weeks on the care of injured workmen. These follow-up reports need not be extensive and should include the identification of the patient, the date of accident, and a brief note of developments during the preceding two weeks. Some physicians may

complain that "here is some more of that paper work." May we direct their attention to the fact that progress notes are required in all good hospitals and this is nothing more than such a performance and we recommend that those physicians who do not want to trouble themselves to make this cooperation with the Administration should decline to treat these cases.

When physicians render medical care to injured W.P.A. workmen, no matter what the character of that care may be—x-ray, pathology or otherwise—the doctors should render bills for such services from their homes and not from the hospitals. This will avoid confusion as to the relationship of the hospital to the medical care. Where there is a question of proration of fee between the doctor and the hospital that is a matter of arrangement outside of the domain of the Works Progress Administration. They will pay one fee for the service.

September 9, 1936

DOCTORS FEES LIKE TAXI FARES

A hundred years ago practicing physicians in New York City and other Eastern communities charged by the mile, like modern taxicab drivers, according to Dr Henry Burnell Shafer, whose book, "The American Medical Profession, 1783 to 1850," is reissued by the Columbia University Press.

In Lowell, Mass., for example, the standard charge for treating patients at home was seventy-five cents for the first mile and

forty cents for each additional mile, with a surcharge of twenty-five cents a mile for night trips.

Dr Shafer's research discloses that in those days New York surgeons charged \$50 for amputation of a limb, \$10 for amputation of a finger or toe. Bleeding charges were — By cupping glass, \$5, at the arm, \$2, and at the jugular vein, \$5.

WORLD'S FAIR

The Big Fair as a Medical Show

Plans for a great health center and permanent public museum of health and hygiene for the New York World's Fair of 1939 are announced with the formation of an advisory group representing city and national health and medical organizations.

In making the announcement, Grover Whalen, President of the Fair Corporation, said that health and medical science will be ranked as one of the most important phases of the Fair. Plans for the necessary buildings and exhibits are yet to be worked out, but both the Oberlander Foundation and the Carnegie Corporation have already pledged financial aid. Other grants are expected to provide a fund for retaining the exhibits as a nucleus for the permanent museum.

The committee, of which Dr. Louis I. Dublin will be chairman, will undertake a five-fold project involving the establishment of a permanent museum of hygiene such as the famous German institution at Dresden.

The five major objectives as announced are:

1. A complete coordinated health and medical exhibit, illustrating for public education the results of medical research, which would furnish during the Fair a nucleus for a large group of commercial exhibits of products related to health and afterwards the nucleus of a permanent institution.

2. A model health village constantly demonstrating equipment and methods in daily use by individuals, families, and communities.

3. Emphasis at every appropriate point throughout the Fair of protective devices and services installed for the benefit of the visitors, which illustrate with commercial advantage the value of the device.

4. Provision for a permanent health center.

5. A strict censorship of medical products and other things sold or promoted on a health basis.

The makeup of the committee is as follows: Chairman, Dr. Louis I. Dublin; Vice Chairman, Dr. James R. Reuling; Secretary, Mr. Homer N. Calver.

For City of New York: Dr. John L. Rice, Commissioner of Health, and Dr. S. S. Goldwater, Commissioner of Hospitals.

For Medical organizations: Dr. George Baehr, New York Academy of Medicine, Dr. James R. Reuling, American Medical Association, and Queens County Medical Society.

For Public Health: Dr. Victor Heiser, chairman of the General Council on Medicine and Public Health, Dr. Louis I. Dublin, National Health Council, Mr. Homer N. Calver, American Public Health Association and allied groups.

A larger general committee will be formed later to give representation to numerous organizations that may have something to contribute to the exhibits.

Activities of the committee are already well under way. Dr. Dublin has sailed for Europe, and while abroad will work to interest health and hygienic organizations in holding congresses in New York during the World's Fair period.

Secretary Calver has just returned from abroad, where he spent eight weeks visiting health museums and expositions to seek material for inclusion in the exhibits here. He brought back more than fifty exhibits from Germany, France, and England for consideration of the Fair committee.

The medical center and exhibits are being planned, it was explained by President Whalen, with the aim of presenting "the material, social and professional equipment now available to society for its health protection and promotion, and to provide a dramatic visualization of the brilliant possibilities for a humanity fully served with these facilities."

"Public health and medicine are deeply concerned with the future of individuals and the race. Their objective is aptly phrased by Dr. Dublin in the statement, 'If we could apply the knowledge we possess we could add ten years to the average life expectancy in America.'"

The health and medical exhibits, it was pointed out in Mr. Whalen's statement, will tell simply of the relation of the exhibits to the individual, with man himself as the central motif. In the exhibit, it is planned to have representations of:

"Models of the human embryo in its various stages of development.

"Formation of habits, nutrition, and other problems of bodily and mental development in the early years of life, illustrated with common examples which the visitor may recognize from his own experience.

"Protective devices in school and playground, discovery and correction of defects, organization of the school for health and health teaching, posters, models, plays and programs prepared by the children themselves, would visually demonstrate the beginning of participation by the individual himself in his own health protection and promotion.

"Men and women in adult life, their hazards of occupation, personal hygiene, periodic examinations, accident prevention, responsibilities of parenthood, typical prob-

lems illustrated here with moving devices, and mechanical demonstrations will carry along the dramatic story of man's inward struggle to survive and prosper in his modern environment

"A considerable section of the exhibit will be devoted to the early recognition of degenerative diseases, such as heart disease, cancer, nephritis, and diabetes. The fact that much may be done to prolong the lives of those who suffer from these diseases should alleviate the mental strain and stimulate sufferers to avail themselves of the skill of surgeons, the benefits of x-rays and radium, the relief afforded by insulin, etc

"Dominating this section of man himself and visually summing up the health story of his life may be a life-size man, woman and child, all transparent (as was the transparent man at the Century of Progress) naturally posed and inwardly illuminated to furnish a brief lesson in gross anatomy and surrounded with working models of the heart, the lungs and other organs, so that the visitor can see 'how the wheels go round' and thus better understand the care of his own body

"Why do some people get sick and some stay well? The question of immunity affects all age groups. A special section of the exhibit may be set aside to deal with this little understood problem. What we know about immunity, how it may be acquired naturally and artificially, its possibilities and limitations. This story has never been told wholly and understandably to the public. Working models showing the reactions of toxin and antibodies as they are now understood will provide a sympathetic understanding for immunization and vaccination services"

Other subjects to be included are

Air hygiene and ventilation
Nutrition and the food supply
Water purification and sewage disposal
Municipal cleansing
Noise—its cause, effect and prevention

Mental hygiene—what it is and how it serves
Epidemiology and the disease detective
Protein poisoning—the ragweed and its allies
The sagas of the Health Heroes of History
Quacks, Quackerv, Nostrums, Fads and Fallacies

Superstitions—old and new—Relics of the Medicine Man

"It should be pointed out," Mr Whalen continued, "that these proposals for the exhibit are definitely related to plans for the establishment of a permanent national museum or similar institution devoted to mass education in health, situated in New York on the Fair site or elsewhere. Such an institution has abundantly demonstrated its value in Europe and it is believed that with such a permanent goal the development of the health and medical exhibit at the World's Fair would be immeasurably facilitated

"In addition to these proposals for the health and medical sections of the Fair, there are other related matters contributing to the success of the Fair to be considered

"For example, a model American community constructed and operated under expert health guidance would be interesting and instructive. Here in model homes, built with constant attention to details which affect the health of the occupants and equipped with every device which modern industry affords for health protection, a selected group of people trained to observe health rules, would live during the Fair. By signs or otherwise attention would be called to health protection devices and practices in homes and shops and stores. This would be a constant living demonstration of personal, family and community health, which at the same time would offer opportunity for a display of reliable, commercial products in use.

"A further and most important consideration is that all phases of the Fair be developed and operated to assure the maximum health protection to Fair visitors and workers"

THE BIGGEST PUBLIC HEALTH MENACE

With one-tenth of the entire population of the United States already infected and with one-fourth of these persons doomed to chronic invalidism or death, syphilis presents itself today as the greatest public health problem in the United States, according to Dr Joseph Earle Moore, Director of the Syphilis Clinic, Johns Hopkins Hospital, in an address at the annual convention of the State and Local Committees on

Tuberculosis and Public Health at the Hotel Biltmore, New York City

In its effort to aid in the treatment of patients infected with syphilis, the State of New York has now extended its free distribution of arsenical and bismuth preparations used in the treatment of syphilis to physicians throughout the State without charge, and without reference to the financial condition of the patient, Dr Ramsey told the convention.

THE PHYSICIANS' HOME

Encouraging progress is reported in the campaign to raise an endowment for the Physicians' Home. Dr. Charles Gordon Heyd, president of the corporation, announces that contributions are coming in daily in response to a recent mail appeal sent to the physicians of the state, but that funds are still inadequate to meet the need.

"A present," says Dr. Heyd, "we can only care for six guests, and have many fine men on the waiting list."

The appeal for funds sent the physicians of the state is an urgent request for assistance in taking care of members of the profession.

"Sir Ronald Ross," states the circular, "after long years of research, revealed the cause of malaria—thereby honoring his profession and himself—and adding untold millions to the wealth of the world."

"But Sir Ronald, when old and poor, still had to labor for his daily bread."

"It is to men of the stamp of Sir Ronald Ross—those who have done their best, according to their abilities—that we should like to offer a home when the time comes for them to rest, deservingly without worries. The Physicians' Home represents the effort of a group of physicians to open up the way."

"Founded in 1918, it has existed through the years on a modest scale. But the whirlwind of a national depression has left in its wake the stark reality that this 'modest scale' is shamefully deficient."

"Recognizing the tragedy—particularly to many older colleagues—that economic conditions are bringing, the Physicians' Home has been reorganized, the Board of Directors enlarged, new officers elected, and a fresh impetus established, namely, to create

an adequate home where distressed but worthy members of our profession will be offered comfort and companionship, together with our full esteem.

"They are men who would not care to go to a local or state institution. They are men, like the aged physician of good standing who wrote, 'On account of my physical condition I am slipping back and finally will have to join the great number of professional people with poverty before them and no home to which I can go. It is not the case yet, but how I fear it! If it should be, I cannot live any longer.' This physician would be too proud to make an appeal to a state or local fund, but will gladly become a guest of the profession, and has received our invitation to come to us when he is ready."

"At present the Physicians' Home is limiting its field to New York State. We are urging you, as a New York physician, to give us whatever help you can, either by becoming a Member, a Patron, or a Benefactor—or by enlisting the sympathetic cooperation of grateful patients and other non-medical friends of the profession. Annual Member, \$10 or more, Sustaining Member, \$100 to \$1,000, Life Member, \$1,000 to \$5,000, Patron, \$5,000 to \$10,000, Benefactor, \$10,000 or more."

Make the check payable to the Physicians' Home and mail it to Dr. B. Wallace Hamilton, treasurer, 52 E. 66 Street, New York City.

Officers of the Physicians' Home include Dr. Charles Gordon Heyd, president, Dr. Warren Coleman, 1st vice-president, Dr. Silas F. Hallock, 2d vice-president, Dr. B. Wallace Hamilton, treasurer, and Dr. Joseph J. Eller, secretary.

PUT DRUGS UNDER LOCK AND KEY

The State Health Department has warned doctors and other narcotic dealers in New York State to keep their supplies "under lock and key to prevent further thefts by addicts."

The warning is made, the department said, as the result of two recent thefts in the Albany area, one from a physician's office and the other from an institution.

"A big step can be taken in the promotion of public health and improved social conditions if all of these persons who legitimately handle narcotics will comply with this warning and prevent the addict from securing these drugs," Frank J. Smith, supervisor in narcotic control in the department, said.

"The ease with which one theft was committed by a floating drug addict who came to this state from an outside community and secured the narcotics has a particular interest to all of us. This instance, not uncommon, draws attention to the need for safe storage of narcotics and for maintenance of accurate records regarding the dispensing of such drugs by physicians and pharmacists."

"In this particular case the physician had no knowledge of the loss of the tablets until their identity had been traced by the department through the manufacturer and then reported to the physician."

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested

Allegany County

DR EDWIN F COMSTOCK, of Wellsville, Secretary of the Allegany County Medical Society, reports that the quarterly meeting of the society will be held in Belmont on October 29 Officers will be elected

Cayuga County

DR C H MAXWELL of Auburn reports that on September 24, Dr Russell H Cecil gave a postgraduate lecture, as arranged by the State Committee, on Chronic Arthritis and that other lectures will follow, to be delivered at 8 30 P M sharp at the Auburn City Hospital on the following schedule

Oct 1 "Significance of Laboratory Tests and Methods", Dr Ralph Stillman, New York City

Oct. 8 "General Aspects of Abdominal Surgical Diagnosis", Dr Edward Livingston, New York City

Oct. 15 "Physiology of Kidney Diseases", Dr William Goldring, New York City

Nov 19 "Legal Relationship Between Patient and Physician", Lorenz J Brosnan, Esq., (to be read by Mr Thomas H Clearwater, Attorney to State Society)

Columbia County

DR. FREDERIC C HARGRAVE, President of the Medical Society of Columbia County, has written a letter to Dr John R. Ross, President of the Medical Society of Dutchess County, complaining that some of the Dutchess doctors are "underbidding" Columbia county doctors in the matter of children's health examinations as ordered by the State Department of Education

"I am writing you so that you may know what we are doing on our side of the line and to ask if we might be favored with a little help from Dutchess county," the letter reads

"We are running into a little difficulty along our southern border because some of the men on your side of the line are underbidding our men in the matter of these health examinations

"In fact they are offering to do them for \$ 50 a child.

"We, in this county, do not feel that in this effort to make an examination of the type wanted by the State Department of Education that we can afford to do them for less than \$1 as it takes approximately 15 minutes for each child if the outline is followed.

"I did not know but what a communication from you to these men along your northern border would help to keep misunderstandings in this matter from arising"

Dutchess County

A SPECIAL PROGRAM of motion pictures was shown at a meeting of the Dutchess County Medical society at the nurses' home, St. Francis' hospital, on Sept. 9

The pictures included the Diagnosis and Treatment of Infection of the Hand by Dr Allen B Kanabel of Chicago, and the Treatment of Burns by Dr Grover C Penberth of Detroit

The discussions were opened by Dr J E Sadlier and Dr Moffit of this city

Erie County

DR. LOUISE W BEAMIS, Secretary of the Medical Society of the County of Erie, reports that the next stated meeting of the Society will be held October 19 The meeting will be devoted to committee reports, chiefly workmen's compensation and maternal mortality, with discussion of the work done since the May meeting

Franklin County

DR. LEONARD ROWNTREE, of Philadelphia, gave an address on "Hypertension" on Aug 26 at the John Black Room, Saranac Lake, before the Saranac Lake Medical Society and visiting physicians and medical students

Jefferson County

DR C A. PRUDHON, Secretary of the Medical Society of Jefferson County, reports that the next meeting of the society will be held October 8 at the Black River Valley Club, Watertown

Kings County

THE NEXT MEETING of the Medical Society of the County of Kings will be held Oct 20 in the MacNaughton Auditorium, 1313 Bedford Ave., Brooklyn.

Lewis County

DR. F E JONES, Secretary of the Lewis County Medical Society, reports that the annual meeting will be held on the second Tuesday in October, the 13th, at Lowville

Monroe County

DR. MILTON VAN HORN, seventy-two, Churchville physician for more than forty years, died Aug 25

He was born in Register, Pa, Nov 30, 1863, and was graduated from the University of Pennsylvania in 1891, going to Churchville in the late summer of the same year to practice his profession

Eight years ago, failing health forced retirement for Doctor Van Horn, who in his younger days had been known to exhaust four or five horses in making the rounds of his numerous patients

Actively interested in civic problems, Doctor Van Horn served on the Churchville Board of Education for twenty years

DR A P MAINE, aged ninety, oldest practicing physician in Monroe County, was the guest of honor at a clambake at the Webster Presbyterian Church on Sept 17

New York County

THE NINTH ANNUAL GRADUATE Fortnight of the New York Academy of Medicine to be held October 19 to 31 will be devoted to consideration of trauma, occupational diseases and hazards

Twenty-three important hospitals of the city will present coordinated afternoon clinics and clinical demonstrations. At the evening meetings prominent clinicians from various parts of the country who are recognized authorities in their special lines of work will discuss various aspects of the general subject. A comprehensive exhibit of books, pathological and research material, apparatus for resuscitation and other first aid appliances will be assembled. Demonstrations will be given at regular intervals

Among the topics to be presented at the meetings, in the clinics and in the exhibit will be first aid in industry, in the home and on the highway, accidents and their management, burns—thermal, electrical, radiant and chemical, medicolegal aspects of trauma and disability, carbon monoxide poisoning, fatigue and noise in industry, harmful conditions in industry, industrial poisonings, and relation of trauma to disease

The medical profession is invited to attend. A complete program and registration blank may be obtained from Frederick P Reynolds, M D, The New York Academy of Medicine, 2 East 103 Street, New York City

THE SEVENTH CLINICAL SESSION on chronic pulmonary diseases, under the auspices of the Tuberculosis Sanatorium Conference of Metropolitan New York, will be held in the amphitheatre at the Cornell Uni-

versity Medical College, at 1300 York Ave, 69th-70th Sts, Wednesday evening, Oct 7. For further information communicate with Bernard S Coleman, Secretary, 386 Fourth Avenue, New York City, Caledonia 5-2240

DR. WILLIAM HALLOCK PARK, who collaborated with Dr Hermann M Biggs in developing a successful diphtheria antitoxin, and Dr Harold Dickinson Senior, eminent research scientist in the field of embryology of arteries and veins, have retired from the faculty of the New York University College of Medicine after a total of sixty-four years of teaching service.

DR JOHN WINTERS BRANNAN, a general practitioner of medicine in New York for half a century and formerly for twenty-one years president of the board of trustees of Bellevue and Allied Hospitals, died on Aug 30 in the Polyclinic Hospital, after a year's illness, at the age of eighty-three.

Dr Brannan was largely instrumental in bringing about the reorganization of Bellevue and its allied hospitals, providing new buildings for them and raising their standard of medical treatment

From 1902 to 1923 Dr Brannan was president of the trustees of Bellevue and Allied Hospitals. He was appointed to the board by Mayor Low after he played an active part in obtaining an amendment of the city charter which removed the hospitals from the Department of Charities and provided for their reorganization under a board of trustees

During his long service as president of the trustees new buildings were provided for Bellevue and its allied hospitals, Gouverneur, Harlem and Fordham. A separate psychopathic department was established at Bellevue, appointments to the medical boards of the hospitals and the system of medical and surgical directors were reorganized to insure continuity of service, and the Bellevue Hospital School for Midwives was established

An authority on tuberculosis, Dr Brannan secured the opening of the first fresh-air classes for under-nourished or tubercular pupils in the public schools in 1910 and was instrumental in establishing the Neponsit Beach Hospital for Children on Long Island.

While in the last several years Dr Brannan had not been in active practice, he was at his death consulting physician at Bellevue, Polyclinic, Ruptured and Crippled and Willard Parker Hospitals and a member of the medical advisory board of the Department of Health. He was trustee of the New York Infirmary for Women and Children and member of many medical societies

Niagara County

DR. C W GEORGE, of Lockport, Secretary of the Medical Society of the County of Niagara, reports that the next meeting will be held on Oct. 13 at the Niagara Hotel Niagara Falls. Dr Russell L Cecil, of New York City, will speak on "Pneumonia"

Oneida County

DR. JAMES IRVING FARRELL, Secretary of the Medical Society of the County of Oneida, reports that the next meeting will be held on Oct. 13 at "Broadacres," the Oneida County Tuberculosis Sanatorium. It will be a luncheon meeting.

Ontario County

DR. J W HOWARD, of East Bloomfield, was host on Sept. 10 to the Canandaigua Medical Society at the first Fall meeting.

Dinner was served, followed by the business session and a paper by Dr J R Honiss, of Rochester, Summer resident of the West Lake shore, on "Nasal Ionization Treatment of Hay Fever."

Orange County

STRESSING THE POINT that it took only \$50 to start the project, Dr Joseph N Bellino, town health officer, won his petition for a health center in New Windsor at the Town Board's meeting in Vail's Gate on Sept. 8, says the *Newburgh News*.

Dr Bellino explained that he proposes to use the old New Windsor railroad station as a clinic until conditions warrant that such a station should be placed in a more congested part of the town. He pointed out that \$50 would suffice to prepare the station for the clinic which will take care of children in the preschool ages between six months and five years.

Labor for renovating the station and funds for equipping the clinic have been promised by taxpayers.

Rockland County

THE FIFTH ANNUAL clambake of the Rockland County Medical Society, held on September 9 in the grove at the county sanatorium at Summit Park, was marked by the presence of distinguished guests. It was one of the best affairs ever given by the medical profession and was largely attended, according to a report sent in by Dr William J Ryan, of Pomona, Secretary.

Guests of the county doctors included Dr Floyd S Winslow, of Rochester, president of the Medical Society of the State of New York, Dr Joseph S Lawrence, of Albany, executive officer of the society, Dr Eugene W Bogardus, of White Plains, director of

the Division of Tuberculosis of the Department of Health of Westchester County, John B Kelly, superintendent of the New York Reconstruction Hospital Home at West Haverstraw, Dr Oswald R. Jones, Dr Frank B Berry and Dr James W Smith, all of New York City.

In addition there were present Dr George A Leitner, president of the Board of Managers of the sanatorium and three members of the board, Dr John Sengstacken of Stony Point, Dr George J Vieth of Suffern and Alfred Miller of Haverstraw.

St Lawrence County

DR. DAVID M. FOSS, seventy-six, a practicing physician at Gouverneur for the past 36 years, died at his home on Sept. 8, after two weeks' illness.

During the thirty-six years that Dr Foss had his office in that village, he became a familiar figure throughout the wide section of the north country, says the *Watertown Times*. The weather was never too cold, nor the snow too deep, nor the distance too far for him to start out at any hour of the day or night. In the days before automobiles, he had three drivers who were kept busy day and night carrying him all over St. Lawrence county with a horse and buggy or cutter.

At one time Dr Foss was making trips to fourteen towns adjoining Gouverneur to call on his patients, according to Mrs Foss. In the past few years of his practice, Dr Foss became well known for his success in the treatment of eczema and other skin diseases. Patients have come to consult him on these diseases within the past two or three years from about twenty-four states and from Canada. They have come from all the eastern states and from as far west as Indiana and Illinois.

Schenectady County

DR. ARTHUR Q PENTA, of Schenectady, told the 14th Congress of French-speaking Physicians of North America in Montreal on Sept. 10 that smoking has increased the number of asthma sufferers among women. Dr Penta heads the bronchoscopic clinic at Schenectady City Hospital.

Seneca County

DR. FREDERICK W LESTER, Secretary of the Seneca County Medical Society, reports that the semi-annual meeting will be held October 8 at the Willard State Hospital, Willard. The scientific program will include a paper by Dr A W Sohrweide of Syracuse, on "Some everyday problems in the treatment of diseases of the skin", and a clinical demonstration of "Some forms

of mental disease", given under the direction of Dr Harry J Worthing, superintendent of Willard State Hospital, by some member of his staff. A mid-day dinner will be served in the hospital by the invitation of Dr Worthing.

Steuben County

DR C E PATTI, physician, and Dr Porter Sweet, dentist, have consented to donate their time for an evening each week to teach courses in personal health and disease prevention in the Adult Education night school in Hornell sponsored by the State Department of Education and directed by Francis J King.

The course will be part of the program to enlist prominent professional persons in Hornell to donate their time for instruction in the night school as new features in addition to the regular curriculum. A similar set up is being designed for twelve other Steuben communities, Bath, Corning, Wayland, Hammondsport, Pulteney, Woodhull, Canisteo, Arkport, Atlanta, and Cohocton.

Sullivan County

DR DEMING S PAYNE, of Liberty, Secretary of the Medical Society, County of Sullivan, reports that the annual meeting and election of officers will be held on October 14.

Warren County

DR MORRIS MASLON, Secretary of the Medical Society of the County of Warren, reports that the annual meeting will be held on Oct 14 in Glens Falls. It will be mainly a business meeting.

Washington County

DR S J BANKER, of Fort Edward, Secretary of the Medical Society of the County of Washington, reports that the annual meeting will be held at Hudson Falls on Oct. 6.

Westchester County

INTERESTING ITEMS of news from the hospitals of Westchester County are contained in the *Westchester Medical Bulletin*.

Lawrence Hospital, Bronxville, has just completed a rather extensive program of renovation. The X-ray department has been removed from inadequate quarters in the basement to commodious rooms on the second floor. A number of new units of X-ray equipment have been purchased, and a pleasant waiting room for the department has been provided. Three new semi-private rooms of two beds each have been added, and in the out-patient department new clinic rooms have been opened. There have also been extensive alterations in the wards, giving increased light, the accident

room has been relocated and enlarged, store room space has been expanded, three new electrically heated food conveyors have been acquired, and an incinerator has been built in the basement with openings on each floor.

The hospital's main entrance has been completely changed to give a more spacious appearance, and great changes have been made in the grounds surrounding the hospital.

A new electrocardiograph has been purchased and a room is now being equipped for electrocardiograph and basal metabolism examinations.

Miss Grace C Schmiedel, who has been connected with Lawrence Hospital for a number of years, was appointed Assistant to the Superintendent. Miss Antonie Reuter, who for over ten years was in charge of the nursing in the Private Pavilion of the Lenox Hill Hospital in New York City, was appointed Director of Nursing on July 1st. Dr Robert P. Sim, Dr William T. Doran, Jr., and Dr L. C. Gerlinger were appointed resident physicians and surgeons on July 1st.

The hospital ambulance now covers the Community Welfare District in Yonkers between the Bronx River Parkway and Central Avenue, Midland Avenue on the south, to the town of Greenburgh on the north. With the addition of this new territory the accident service of the hospital has been greatly increased.

The Board of Governors of the White Plains Hospital has recently announced tentative plans for the erection of what is eventually to be an entirely new hospital at an ultimate cost of \$850,000, or more. The present structure, built in 1906 would be razed with the completion of the new unit, except for the north wing which was built in two sections in 1924 and 1929, which would be retained after remodeling.

The Board's action followed the several recommendations of Charles F. Neergaard, well-known local hospital consultant, who has studied the present and future hospital needs in the White Plains area.

Ossining Hospital is contemplating additions to its present plant costing up to \$125,000. A new maternity ward, a private maternity floor and possibly a new operating room are the hospital's present needs which the proposed extension would meet. A drive to obtain funds for the new construction may be made late this fall.

A new Genito-Urinary Service has been established in Dobbs Ferry Hospital under the direction of Dr John A. Whisenant, who recently was appointed to the Medical and Surgical Staff of the Hospital. A new Cystoscopic Room has been provided with modern type equipment, and Dr Whisenant is planning to conduct special clinics under this service which will be available to the community.

Francis L. Mulvihill, formerly connected with the New Haven, Conn. Hospital has been appointed superintendent of the Ossining Hospital, to succeed Miss Anna McLaughlin. The new hospital superintendent was for 13 years assistant superintendent of the New Rochelle Hospital, leaving there in 1934 to recuperate from injuries received in an auto accident.

Medicolegal

LORENZ J. BROSNAN, ESQ.
Counsel Medical Society of the State of New York

Physicians and Surgeons—Liability for Negligence of Another Physician

One of the leading cases on the responsibility of a physician for the acts of a substitute chosen by him was decided some years ago in one of the Southwestern states*.

The plaintiffs in the action were a Mr. and Mrs. L. The husband had engaged the services of Dr. M during the approaching confinement of his wife. A visit was made to the home of the patient between 1 and 2 A.M. by Dr. M, who at that time, promised to return when needed. After leaving the patient, however, Dr. M found that he was that day obliged to attend Court on a lawsuit and that he had certain other pressing engagements of a professional nature. Consequently at 8 A.M. the same morning he got in touch with a Dr. H who enjoyed a good reputation as a physician in the community. Dr. M informed Dr. H that he might be needed during the morning, and to be in readiness.

Within an hour the husband of the patient reported by telephone to Dr. M that he thought his wife was in need of care. The doctor thereupon told L that he was unable to come, due to important business, but that he would send another physician. The response of L was a request to send the substitute in a hurry. Dr. M without delay called Dr. H and explained the case and asked him to go right out and look after Mrs. L. He instructed Dr. H to notify him if he needed help, or if anything should go wrong in which event he promised to either respond himself or send assistance.

At 10 o'clock Dr. H arrived upon the scene and proceeded to deliver the child. No dissatisfaction was expressed by the husband to Dr. H at the time concerning the arrangement and when he visited the patient a few days after the delivery L paid Dr. H the amount of the fee which he had agreed to pay Dr. M.

The husband brought suit against Dr. M both upon an alleged breach of contract and for alleged malpractice charging that Dr. H was negligent in the care he had administered to Mrs. L and that as a result she had been injured.

Upon the trial of the case the fact situation was shown to be in substance as set forth above. There was evidence provided

by plaintiff's witnesses to establish that Dr. H had in fact been negligent, and the question reduced itself to the one of whether or not Dr. M was chargeable with the negligence of the substitute. The husband upon the trial admitted that when told of the defendant's reasons for not treating the patient, he had responded by urging haste in sending another doctor.

The trial judge refused to charge the jury that Dr. M was responsible for any negligence or want of skill on Dr. H's part, regardless of the care used by Dr. M in selecting the substitute.

The trial resulted in a judgment in favor of the defendant and the matter was carried up on appeal, and finally affirmed by the highest Court in the State. The Appellate Court interpreted the facts as indicating that L had assented to Dr. M's non-attendance upon his wife, and in ruling in favor of the defendant, quoted the applicable legal principles as follows:

It is not the law that one who contracts to furnish or pay for medical or surgical aid and attention to another is liable at all events for the mistakes or incompetency of the physician or surgeon he may employ for that purpose. There must be some neglect or carelessness or misconduct on his part in the performance of his obligations arising under such contract. If he acts in good faith and with reasonable care in the selection of the physician or surgeon and has no knowledge of the incompetency or lack of skill or want of ability on the part of the person employed, but selects one of good standing in his profession, one authorized under the laws of this state to practice medicine and surgery, he has filled the full measure of his contract, and cannot be held liable in damages for any want of skill or malpractice on the part of the physician or surgeon employed.

The Court in its opinion discussed the distinction between the master and servant situation, and the situation where the person actually negligent was an independent contractor, rather than a servant. The Court found that the case before it was one where Dr. H was not in any true sense a servant of Dr. M. The reason for the distinction, it was pointed out, was that Dr. M did not retain any right of control over the acts of Dr. H. He necessarily had to act almost exclusively on his own initiative, following his own judgment.

It is interesting to note that the decision in this case has recently been relied upon

* Moore v. Lee, 211 S.W. 214

by the courts as authority to sustain the proposition that a general practitioner is not responsible for the negligence of a specialist called into a case by him, provided the general practitioner used reasonable care in selecting the specialist *

Death following Herniotomy

A middle-aged man was referred to a general surgeon for operation with respect to a condition of hernia from which he was suffering. Examination revealed a large left femoral hernia five inches in diameter, a left inguinal hernia, and a small right inguinal hernia. The doctor under a local anesthetic, in one operation making two incisions, repaired all of the conditions which were present. His recovery from the operation was uneventful for three days when he developed a temperature and his abdomen became distended and he became nauseated. The patient died the following day four days after the operation. An autopsy was performed upon the body of the patient and the autopsy report gave as the cause of death bronchial pneumonia, chronic myocarditis, chronic nephritis, and paralytic ileus.

An action was brought against the surgeon charging him with having negligently treated the patient and causing his death. The specific charge of negligence that was made was that the defendant should never have operated upon the patient since he was a chronic sufferer from heart and kidney diseases. The case came on for trial as a non-jury case and the plaintiff tried to sustain the case by the testimony of the physician who performed the autopsy and found a degree of myocarditis and nephritis. However, on cross examination the said doctor testified that there was nothing about the condition which he found in the autopsy that contraindicated the procedure carried out by the defendant. At the conclusion of the testimony, the Court decided the case in favor of the defendant thereby finding that the charges of malpractice were not well founded.

* Floyd v. Mitchie, 11 S.W. (2d) 657

Claimed Improper Examination

A woman 38 years of age consulted a general practitioner complaining of profuse menstruation. He examined her and made a diagnosis of submucous fibroid of the uterus and advised an operation. She told the doctor that she would think over the question of undergoing an operation and left.

She returned about two weeks later still complaining of bleeding. He undertook to examine her again at that time and upon introducing a bivalve speculum vaginally he found that blood was oozing from the cervix. He sponged the cervix and vagina with sterile cotton and completed the examination. He again advised operation. He did not apply any packing but sent her home, telling her that if the bleeding got worse to get in touch with him. He never saw her subsequent to that time.

Thereafter a malpractice action was instituted against the doctor by the patient in which the charge was made that instrumentation by the doctor had caused the plaintiff to bleed and that he had improperly allowed the plaintiff to leave his office while she was in the course of a severe hemorrhage.

Upon the trial of the action before a court and jury it appeared that a short time after she left the doctor's office she did undergo a severe hemorrhage and that she was taken to a hospital where an operation was performed upon her.

The plaintiff produced an expert who testified that he had recently examined the plaintiff and found her to be suffering from anemia which he attributed to shock, loss of blood, and operative procedure, which he claimed she went through due to the negligence of the defendant.

It was the contention of the defendant that the operation which the plaintiff actually underwent was precisely the same operation which he recommended and that her convalescence from the said operation was perfectly normal.

The issues of the case were submitted to the jury and a verdict was rendered in favor of the defendant doctor, thereby exonerating him of all charges of malpractice.

A WORD TO GRUMBLERS

Doctors who think their medical society dues are high are told by the New York *Medical Week* to cast a glance at the dues of \$20 in the County Lawyers Association, of \$75 in the Bar Association, of \$30 in the Plumbers Union (with \$200 initiation fee), and of \$64 in the Electrical Workers (with \$100 initiation). Instead of being high,

"the County Society dues are low—too low, in fact, to sustain the ever-expanding duties which organized medicine must assume. Many spheres of influence are closed to the profession because its official organizations have not the funds for active participation in important movements."

Across the Desk

Chasing the Hookworm Around the World

IF THE SWARMING MILLIONS of the Far East could have looked across the globe on May 31, 1889, they might have seen a sixteen-year-old boy leaping, dodging, swimming from one piece of wreckage to another as he rode the death-dealing crest of the great Johnstown flood. Hundreds were being killed on every side, including his own father and mother, but by almost super-human agility, good luck, and perhaps a watchful providence, he came through unharmed.

The boy was Victor Heiser, and in the years between that date and this he has played a leading part in the tremendous health movements that aim to eradicate hookworm, leprosy, cholera, smallpox, beriberi, plague, malaria, and other scourges of Asia and the island paradises of the eastern seas. It is not too much to say that many a little brown or yellow man enjoys life and health today because that nimble boy made the jumps from roof to roof as houses, barns, freight cars, trees, animals, and people boiled and swirled down the Cone-maugh Valley forty-seven years ago.

The story of his fight with the great plagues is now told in the most entertaining style imaginable in "An American Doctor's Odyssey" (W W Norton & Co., New York). The classic Odyssey of Ulysses seems tiny in comparison. Dr Heiser has circled the globe sixteen times in his health campaigns, and has made surveys and started or proposed health programs in forty countries. In not a few the work he helped to found is going on vigorously, and it would seem inevitable that success in one country must stimulate neighboring lands to emulation. His earlier work was in the Philippines, under the U S Public Health Service. Then in 1914 he joined the Rockefeller Foundation and for twenty years traversed the world, mainly in the Orient, starting efforts everywhere to stamp out the diseases that are crippling and wasting the strength of more than half the human race.

It would be impossible, in this brief consideration, to do any sort of justice to the more serious scientific side of Dr Heiser's volume, and the reader must be referred to

the book itself, which should be, not only in the library of every medical society, but in the public library of every city and town that aims to keep informed on what is going on in the world.

The Miracle of the Philippines

Every American, for example, should know what this country has done for the health of the Filipinos, especially at a time when we are casting them adrift to rely on their own resources. In 1903, when Dr Heiser went to the Philippines, he says, "across the street from my office was smallpox, to the right was plague, and to the left cholera." The morgue was piled high with bodies of cholera victims. Smallpox slaughtered 40,000 unvaccinated every year. Tuberculosis took 50,000, beriberi its tens of thousands. Half the babies never saw their first birthday. Ten thousand lepers wandered sadly among the well. The insane were chained like dogs beneath the dwellings. Imitation quinine pills were sold at fabulous prices. Water and food supplies were polluted and poisonous.

Turning over a couple of hundred pages of the book and eleven years of the doctor's life, we come to a refreshingly different picture. It is 1914, and he is ending his work there. "I believed," he says, "that my work in the Philippine Islands had been accomplished. The great pestilences had been brought under control, and the archipelago had become a healthful place for the white man to live in. The Filipinos, who had been a nation of invalids, were well advanced in convalescence."

A Costly Lesson

The vast story of the unrelenting labors behind this achievement could never be put on paper. In the course of a few years the health forces in the islands performed 12,000,000 vaccinations, and not only were there practically no cases of smallpox among the properly vaccinated, but "no one died as the result of vaccination, and not one arm or leg was lost." This was unprecedented, even in Germany, says Dr Heiser, and he explains "I had conceived the notion that if the scarification were not dressed, but allowed to dry, tetanus germs would be less

likely to gain a foothold. Much to our gratification, it turned out that, in trying to avoid tetanus, we avoided nearly all infection."

But it seems that the Filipinos had to learn their lesson. Four years after Dr. Heiser had left, smallpox suddenly flared up in 1918 in a great conflagration, 50,000 died of it that year, and a total of nearly 100,000 in 1918-20. General Leonard Wood, then Governor, recalled Dr. Heiser, and a probe of vaccination reports uncovered enormous falsifications, paid for in human lives. It was a costly lesson, and it is to be hoped that no repetition will be necessary.

Why the Hookworm?

Most of Dr. Heiser's work, however, has been done under the Rockefeller Foundation, and has been directed against the hookworm. He has pursued this satanic wiggler for twenty years, chasing it hither and yon around the world and starting machinery in motion that would seem likely to spell its doom. How the Foundation came to pick on this particular parasite is itself an interesting story. When the elder Rockefeller decided to turn some of his millions to the aid of the world's health, he stipulated that the fight should be waged on some widespread disease that was one hundred per cent curable, and "of which the cause can be clearly seen." That was a sticker, till his advisers thought of hookworm. "We have your disease," they said, "it is hookworm. It affects millions. We know all about it. It can be definitely cured, it is preventible, and the worm can be seen."

That is why the Foundation is tracking this pest without mercy or let-up. It is also battling many other diseases, of course, as we all know, but the hookworm is its pet aversion. Dr. Heiser's book is a liberal education on this tiny imp. We may think we know something here about it, but the entire Orient has been made hookworm-conscious with lectures, movies, public demonstrations, and voluminous propaganda. The doctor mentions with special pride an essay by a native school-girl, on some far-off Pacific isle, entitled "Parasites Lost and Parasites Regained."

One Notable Victory

It is impossible here to follow the doctor along his far-flung battle line—perhaps the

clearest way to present his war is to picture one engagement, in the Fiji Islands. Large numbers of Tamils are imported into Fiji to work on the sugar plantations, and when Dr. Heiser first saw them in 1916 they lived in miserable houses and filthy villages and seemed to have no desire for anything better. No Tamil ever smiled. The women were too anemic for childbearing and an air of misery hung over them all. In 1934 he saw them again—they were like a new creation. "They had been miraculously transformed," he says, "from a dejected, downcast, docile, uninterested people, who could not even play, into one which was healthy, alert, sport-loving, and mentally so progressive that they were agitating for schools and the vote. They owned fine fat cattle and rich lands, and had, on their own initiative, built a superior type of house, each with its neat latrine. This regeneration had been accomplished by mass-treatment for hookworm. Nothing like it has ever happened in history. At last the Tamil smiles."

The difficulties of educating brown, black, and yellow natives when you cannot speak their languages are obvious. Dr. S. M. Lambert, a fellow-worker of Dr. Heiser, went at it by learning pidgin English, the common speech of the Far East. Holding in his hand a little bottle of hookworms, he would say

"You altogedda boy. You listen good 'long dis story. One big fella sick he stop 'long bell' b'long altogedda boy. Name b'long dis sick him be hookworm. You look 'long dis bottle. Gottem plenty small snake fella he stop. Dis fella he stop 'long in bell' b'long boy. Tooth he gottem. He sabe kai kai bell b'long boy. He sabe kai kai blood. Boy him be lose him blood. He weak fella too much. Him be sick too much. Close up he die."

The Boy of Johnstown on His Way

Every kind of vehicle known on land or water has carried the doctor on his globe-girdling rounds. Rickshaws, litters, sedan chairs, wheelbarrows, gondolas, sampans, dahabeahs, proas, liners, battleships and scores of other conveyances have done duty. Four times he has missed, for one reason or another, vehicles or places where he would have met certain death.

The agility of the boy of the Johnstown

flood has sometimes stood him in good stead. Once he reached Shanghai on his way home on the very day four boats were to sail. If he could catch one, he would save a week. As he left his steamer, he saw a shiny black touring car bowling toward him. He planted himself squarely in the roadway and waved his arms like a semaphore. The Chinese driver halted and the woman alone in the car began to scream.

"Shut up!" he commanded, and she promptly obeyed. "Put my baggage in the car!" he ordered his porter. The lady objected but he paid her no attention. "Drive to the English Bund!" he shouted. Off they went, faster and faster, driving through traffic lights as he urged the chauffeur on. He found his steamer gone.

"Drive to the Chinese Bund!" he commanded, and away they flew. The steamer was just casting off. "Throw my baggage

aboard!" he shouted to a coolie, and followed it with a flying jump to the deck. The dinner gong was sounding, so he entered the dining saloon, found a place laid for one, and sat down. Soon the Captain, a bluff, red-faced Britisher, came in.

"What are you doing here?" he demanded.

"I'm one of your passengers."

"We don't carry passengers."

"Where are you going?"

"You'll have to get off!"

"I can't get off!"

Et cetera, et cetera, until, it is needless to say, the two became the best of friends and the doctor told the captain how to make his way into the port of Tientsin in a dense fog.

If the rest of the Rockefeller crusaders are anything like this Johnstown boy, the hookworm's outlook seems practically hopeless.

Books

Books for review should be sent directly to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

ORDERING BOOKS

As a service exclusive to our readers, books published in this country may be ordered through the Business and Editorial Offices of the Journal (33 W. 42nd St. N. Y. C.) postage prepaid. Order must be accompanied by remittance covering published price.

RECEIVED

The Operations of Surgery By R. P. Rowlands, F.R.C.S. & Philip Turner, F.R.C.S. Eighth edition, volume 1. Quarto of 1045 pages, illustrated. Baltimore: William Wood & Company, 1936. Cloth, \$10.00.

Orthopaedic Surgery By Walter Mercer, M.B. Second edition. Octavo of 906 pages, illustrated. Baltimore, William Wood & Company, 1936. Cloth, \$10.00.

Synopsis of Diseases of the Heart and Arteries By George R. Herrmann, M.D. Duodecimo of 344 pages, illustrated. St. Louis, C. V. Mosby Company, 1936. Cloth, \$4.00.

Psychology of Sex A Manual for Students. By Havelock Ellis. Octavo of 377 pages. New York, Emerson Books, Inc. 1935. Cloth, \$3.00.

The Relief of Pain A Handbook of Modern Analgesia. By Harold Balme, M.D. Octavo of 392 pages. Philadelphia: P. Blakiston's Son & Company, 1936. Cloth, \$4.00.

The Oxford Medicine By Various Authors. Edited by Henry A. Christian, M.D. Volume 7. Psychiatry for Practitioners. Quarto of 634 pages. New York: Oxford University Press, 1936. Cloth, \$10.00.

Food, Fitness and Figure By Jacob Buckstein, M.D. Introduction by Harlow Brooks, M.D. Octavo of 252 pages. New York: Emerson Books, Inc. 1936. Cloth, \$2.00.

Heart Disease and Tuberculosis Efforts Including Methods of Diaphragmatic and Costal Respiration to Lessen Their Prevalence By S. Adolphus Knopf, M.D. Octavo of 108 pages, illustrated. Columbia County, New York: The Livingston Press, 1936. Cloth, \$1.25.

Amino Acid and Ammonia Metabolism in Liver Diseases By Esben Kirk. Octavo of 147 pages. Copenhagen: Levin & Munksgaard, Publishers, 1936. Paper, Danish Kroner 10.

Endocrinology in Modern Practice By William Wolf, M.D. Octavo of 1018 pages, illustrated. Philadelphia: W. B. Saunders Company, 1936. Cloth, \$10.00.

Theory and Practice of Psychiatry By William S. Sadler, M.D. Quarto of 1231 pages. St. Louis: The C. V. Mosby Company, 1936. Cloth, \$10.00.

A Manual of Practical Obstetrics By O'Donel Browne, M.B. Octavo of 363 pages, illustrated. Baltimore, William Wood and Company, 1936. Cloth, \$6.50.

Toxicology or the Effects of Poisons By Frank P. Underhill, Ph.D. Thoroughly revised by Theodore Koppányi, Ph.D. Third edition. Octavo of 325 pages. Philadelphia: P. Blakiston's Son & Co., 1936. Cloth, \$2.50.

REVIEWS

Essentials of Psychopathology By George W Henry Octavo of 312 pages Baltimore, William Wood & Company, 1935 Cloth, \$4 00

This book discusses the essential underlying psychology of various mental reactions. It refers to pre-natal influences as well as those acting during the life of the individual and attempts to correlate them with the symptoms the patient may exhibit, a procedure which it is felt leads ultimately to a better understanding of the person who is ill. The latter is the center of the situation and the entire situation must be studied. By citing examples that have come within his experience, the author points the way to the searching student who wishes to discover the relation of symptoms to experiences and thereby evolve perhaps some applicable therapy. It should be helpful to the student as well as the psychiatrist.

A E SOPER

Infant Nutrition A Textbook of Infant Feeding for Students and Practitioners of Medicine By Williams McKim Marriott, M D Second edition Octavo of 431 pages, illustrated St Louis, The C V Mosby Company, 1935 Cloth, \$4 50

Students and practitioners of medicine who are concerned with the nutrition of infants and children will welcome the second edition of Dr Marriott's concise and complete contribution. As in the previous edition the fundamental principles of nutrition are stressed rather than empiric outlines and methods of procedure.

The various nutritional disorders are discussed from their etiologic point of view and receive full consideration. Numerous changes have been made in order to bring the subject up to date but the general outline is the same.

LEWIS A KOCH

The Parathyroids in Health and in Disease. By David H Shelling M D Octavo of 335 pages, illustrated St Louis, The C V Mosby Company, 1935 Cloth, \$5 00

This is a thorough, truly scientific and yet eminently practical monograph on the function and diseases of the parathyroid glands. The author combines careful studies of the American and foreign literature with his own rich experience into an exhaustive survey of the subject.

Many writers of monographs, wishing to be thorough and open minded, have merely enumerated controversial opinions, to the bewilderment of the reader who is but seldom competent to choose between the disagreeing authorities. Dr Shelling has avoided such pitfalls and after marshaling his evidence takes a definite stand concern-

ing most of the moot questions. His analysis of phosphorus metabolism in parathyroid disease is particularly illuminating, especially from a practical viewpoint.

A study of this authoritative and well written book is gratifying both to the student of endocrinology and the general practicing physician.

M A GOLDZIEHER

The Diagnosis and Treatment of Pulmonary Tuberculosis A Handbook for Practitioners A Text-Book for Students, Nurses and Social Workers By John B Hawes, 2d M D & Moses J Stone, M D Octavo of 215 pages, illustrated Philadelphia, Lea & Febiger 1936 Cloth, \$2 75

The authors attempted to produce a brief and concise text book on Tuberculosis—one they hoped that would merit the description "small but authoritative." It is surprising how much solid, valuable, up to date knowledge has been compressed in the two hundred pages of this octavo volume. History taking, symptomatology, diagnosis, both physical and with laboratory aid, and treatment are stripped to all their essentials. Ideas formerly held on the subject of tuberculosis and the treatment, on climate, on heredity and on modes of infection, which have undergone change in the past generation have been brought to the present. The use of the laboratories including X-ray and pathological, with Sputum (Gaffky scale), sedimentation tests and vaccine for preventative purposes has not been overlooked. Tuberculosis in the aged as well as in children is included. Compression therapy of the lungs with indications for the several methods is well and sufficiently described, as are such accessory aids as heliotherapy, occupational therapy, diet, stressing vitamins, and the uses and indications for drugs.

The practitioner will find this book—easily read, filled with much material, obtainable at a rapid glance—of great value in his work.

THOMAS A MCGOLDRICK

The Successful Examiner By Dr Albert Seaton Duodecimo of 90 pages Indianapolis, The Rough Notes Publishing Company, Inc 1935 Cloth, \$1 00

The subject of life insurance examinations and insurance medicine as practiced today, showing the real difference between clinical medicine and insurance medicine is covered by this publication.

It contains a useful table of weights and occupational hazards tables with a list of physical impairments and underwriting practices regarding same.

The book should be useful to the examiner for informing him regarding some of the fundamentals of life insurance practices

G HOLBROOK BARBER

Radium Treatment of Skin Diseases, New Growths, Diseases of the Eyes, and Tonsils By Frances H Williams, M D Duodecimo of 118 pages, illustrated Boston, The Stratford Company 1935 Cloth, \$2.00

This small volume gives the methods of application of radium successfully used by the author over a period of thirty years. Many novel instruments devised by him are described, as well as methods of measurement taking into consideration the thickness of soft parts to be penetrated.

The author emphasizes the safety of radium both to the patient and the operator when properly used.

Part I includes a brief reference to the nature and properties of radium, the author's early studies of beta and gamma rays, measurements of radiations in air and in vacuum, and a chapter on radium in diseases of the skin and new growths.

Part II contains a description of instruments and method of treatment of diseases of the eyelids, opacities of the cornea, cataract, and other diseases of the eyes, with illustrative cases.

Part III considers the tonsils as a source of infection, prevalence of infected tonsils, other forms of treatment, instruments, arthritis, lymphoid tissue in the pharynx, and lingual tonsils, with illustrative cases.

A. L. L. BELL

The Next Hundred Years. The Unfinished Business of Science. By C C Furnas. Octavo of 434 pages. Baltimore, The Williams & Wilkins Company 1936 Cloth, \$3.00

The author made an extended visit to the Century of Progress and left it, disappointed at the meagre accomplishments.

Mr Furnas is associate professor of chemical engineering at Yale University and indicates by means of thirty-one chapters the inadequacy of our civilization. Attention is drawn to the non-utilization of scientific discovery and the almost hopeless stupidity and incompetency of society. The author begins with a discussion of the basic facts of genetics, and progresses to the unanswerable riddle—life, and then to a consideration of death.

Part two is devoted to chemistry, part three to physics, part four to engineering, part five to what is termed "The Social Consequences." The latter embraces a discussion of unemployment, of leisure without lethargy, the effects of a paralyzing demagoguery, and finally indicates what, in

the opinion of the author, is an intelligent populace, and the unsolved problems.

There is much statistical information, a great portion of which is entertainingly portrayed. Some of the problems raised are insufficiently discussed. The pattern of the book is uneven but interesting. The value is in its provocativeness for reflection on the inadequacy of society to improve itself by a fuller employment of scientific discovery.

CHARLES GORDON HEYD

High Blood Pressure and Its Common Sequelae By Hugh O Cunewardene, M B Octavo of 172 pages, illustrated. Baltimore, William Wood & Company, 1935 Cloth, \$3.00

This volume is apparently based on the observations of a limited number of cases of hypertension which have been under the care of the author and his colleagues. The material it contains is familiar to all students of the subject and some of the evidence which has been presented by others does not appear to have been critically evaluated. It is very doubtful if the book adds anything to the knowledge of this very difficult subject.

J HAMILTON CRAWFORD

Localized Rarefying Conditions of Bone as Exemplified by Legg-Perthes' Disease, Osgood-Schlatter's Disease, Kummell's Disease and Related Conditions By E S J King M D Octavo of 400 pages, illustrated. Baltimore, William Wood & Company, 1935 Cloth, \$7.50

This is a very complete monograph of a related group of rarefying diseases of bone as exemplified by Legg-Perthes' Disease, Köhler's Disease, Kienbock's Disease, etc.

The author covers thoroughly all the bones involved in this incompletely understood pathological condition. He discusses the various theories as to their cause, pathology and treatment. The value of the book is enhanced by the complete bibliography at the end of each chapter.

Every orthopaedic surgeon and all physicians interested in bone diseases should have a copy of this valuable addition to orthopaedic literature.

JOSEPH B L'EPISCOPO

A Practical Handbook of Midwifery and Gynaecology for Students and Practitioners By W F T Haultain, F.R.C.S. and Clifford Kennedy, F.R.C.S. Second edition. Octavo of 356 pages, illustrated. Baltimore, William Wood & Company, 1935 Cloth, \$5.25

As the title implies, this book is written primarily for students and practitioners who wish to refresh their memories on obstetrics and gynecology.

The material is arranged in a different

manner than in most text books, the discussion being in numerical order. The sentences are terse, clear, and very didactic. A student should find it easy to get an excellent idea of the subject from this volume, and the general practitioner will welcome a reference book in which the ordinary teaching, common procedures, complications and their treatment, are so plainly and forcefully set forth.

In this second edition, much of the subject matter has been rewritten and brought up to date, making it a small but excellent reference book.

WILLIAM S SMITH

Recent Advances in Cardiology. By Terrence East, M.A., & Curtis Bain, M.C. Third edition. Octavo of 350 pages, illustrated. Philadelphia, P. Blakiston's Son & Co. 1936. Cloth, \$5.00.

This book has been entirely rewritten and fully maintains the high standard of previous editions. The subject has been brought fully up to date and is presented in a clear manner. Not only has the literature been reviewed but a conservative critical analysis of recent work is given, which adds greatly to the value of the book. The review includes the advances in both clinical and experimental fields of the heart and peripheral circulation. Almost a small text on cardiology and peripheral vascular disease, it is invaluable as a supplement to the standard textbook and should be in possession of all those who desire to be familiar with the latest concepts in cardiovascular disease.

J HAMILTON CRAWFORD

Surgery Queen of the Arts and Other Papers and Addresses. By William D. Haggard, M.D. Octavo of 389 pages, illustrated. Philadelphia, W. B. Saunders Company, 1935. Cloth, \$5.50.

Dr. William David Haggard, a son of William David Sr., born in Nashville, Tennessee, rose to be one of the outstanding American surgeons. He is more than a surgeon, he is an investigator of clinical medicine, deeply interested in his patient as a human being.

Dr. Haggard has been President of the American Medical Association, the American College of Surgeons, the Inter-State Postgraduate Medical Association of North America, the Southern Surgical Association, and the Tennessee Medical Association. Due to the requests of friends, patients, and colleagues, he has gathered together about 33 addresses given by him during the past few years. These include a score or more of scientific contributions dealing with goitre, gastric ulcer, surgery of the gall bladder, appendicitis, intestinal obstruction, tumors of the kidney, breast

tumors, and so forth. The first address presented before the clinical congress of the American College of Surgeons in 1933, and entitled, "Surgery—The Queen of the Arts," should be read by every medical graduate and by most lay citizens.

The reviewer found it to his advantage and pleasure to read the book from cover to cover. The use of the English language by Dr. Haggard makes the book worthwhile, even though one does not agree in every detail with its text. There is a foreword by Dr. William J. Mayo, in which Dr. Mayo says, "Dr. Haggard, so to speak, takes the reader by the hand and leads him along the narrow pathways of patient scientific research onto the broad highway of achievement of the medical profession of today." This book should be on the shelf of every American physician.

MERRILL N FOOTE

Dental Infection and Systemic Disease. By Russell L. Haden, M.D. Second edition. Octavo of 163 pages, illustrated. Philadelphia, Lea & Febiger. 1936. Cloth, \$2.50.

This volume, profusely illustrated, is a most valuable contribution to Medicine and Dentistry. Its foreword is written by Dr. Edward C. Rosenow, which is significant.

Dr. Haden has compiled a large number of cases of dental infection associated with systemic disease. For the student interested in the bacteriology of dental infection much help is derived by his treatise on mediums and technique. The author's experimental observations by the use of rabbits which had been injected with the cultures from patients, would indicate a most definite relationship between non-vital teeth and systemic diseases.

The book should commend itself to every dentist and physician.

THEODORE O PETERSON

Post Mortems and Morbid Anatomy. By Theodore Shennan, M.D. Third edition. Octavo of 716 pages, illustrated. Baltimore, William Wood & Company, 1935. Cloth, \$9.00.

The book describes in detail the technique of post mortem examinations and the pathological appearance of various organs. The work is in its third edition and much of the text has been rewritten and the entire book brought up to date. It is profusely illustrated with diagrams and photographs. The descriptions are clear and make interesting reading. The morbid anatomy and post mortem technique in various forms of poisoning is well presented. There is also a chapter dealing with the manner of preserving and fixing tissues and organs, section cutting and staining of same. It is a very instructive book.

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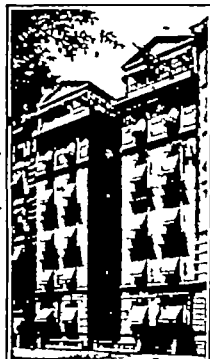
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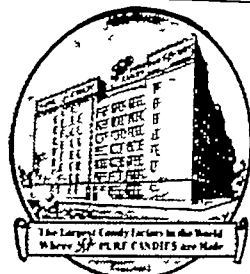
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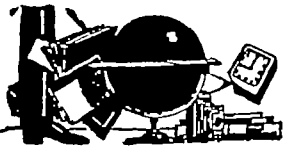
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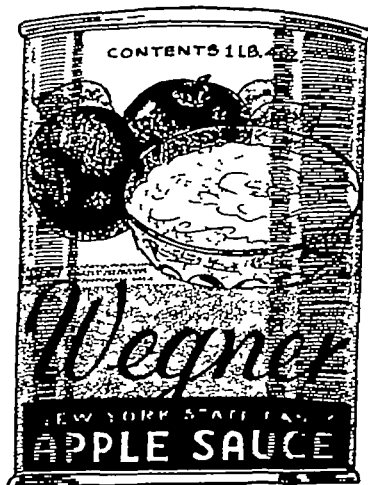
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Travel and Resorts

The Eighth Wonder of the World

Clippity-clop, clippity-clop—the rhythm of the horse's hoofs breaks a silence that is truly golden, and as he slows down for a slight grade it becomes a soft beat of clop—clop—clop—clop. Aside from this and a pleasant accompaniment of birds joining in with flute and piccolo, and a steady strumming of crickets, distracting sounds have almost ceased to exist.

The effect is so impressing that you begin to converse in low tones as if in fear of breaking the spell of an unbelievable fairyland. It is almost difficult to convince yourself that all this is real and not just a dream—and you begin to wonder if it is true that just a short forty hours ago you were a part of that din and clatter of a great metropolis.

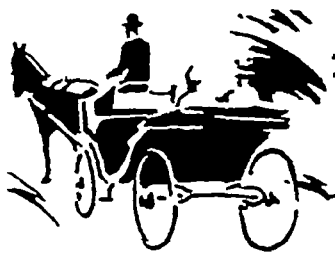
What a soothing relief to be away from the stench of gasoline fumes, the squealing of brakes, and the nerve-wracking hairbreadth escapes of madly dashing automobiles. A tension that has been unconsciously acquired in your work-a-day life, immediately begins to let down as you become absorbed in the gentle sway of a vehicle of by-gone days.

You begin to breathe again—in great big draughts as if you would never get enough of an air as dustless as mid-ocean. The fragrance of cedar and the delicate perfume of blooming plant-life sweeten the air, and you begin to contrast it with cabbage and laundry tainted hallways, the gas works neighborhood, the odor of perspiring humanity in subways, and the thousand and one other offensive smells that surround you in the old home town.

You feel that you are being reborn—as if the Great Healer had washed away more than your sins, washed away the burdens of care, worries, and all the things that are depressing and discouraging.

You live again—forgetting that you are a doctor, one who must watch the suffering of others, feel the pain they must endure and the hopelessness when death is inevitable in a creature you have struggled to save.

If you have been to Bermuda—you know that all thus far is not a Utopian vision. You will recall the pleasantness of the cruise down, going ashore at St. George in a tender, or disembarking at the quay in Hamilton Harbour



The picture of bicycles, like a swarm of sea gulls, sweeping down to greet the visitors coming off ship is again kindled in your mind. You may remember that in the basket of one a dog was being carried, or perhaps you saw the little colored boy pedaling away with a younger sister sitting contentedly in the

basket smiling as only colored folks can.

If your visit was brief, you probably scurried to the "lilliputian" railway station for quick transportation to the caves, the Devil's Hole, and Aquarium or for a swim in sky-blue waters.

But if the stay was not limited to a few hours, your first step was probably to register at the St. George Hotel, the Castle Harbour, Belmont Manor, Sherwood Manor, Imperial, Inverurie, Elbow Beach, Langton, Hamilton, Bermudiana Princess, or the Coral Island Club. Or perhaps to choose one of the modest little guest houses—the Summerside, Gladyn, Royal Prince Victoria Lodge Argyle, American House Westmeath, Glencoe Snow Plant Inn or the Beau Sejour.

In any case you found your selected hostelry, a delightful place of hospitality and friendliness and a convenient point from which to begin exploring the islands.

If you arrived well-informed, your first experience was a carriage ride along the north shore road and around Harrington Sound visiting the caves, the Aquarium, and the Devil's Hole. Your next venture was probably a trip in the glass-bottomed boats, or a sail or a spin around the harbor in a dashing speedboat. You played golf on one of the finest courses in the world, and spent some time on horseback or cycling. You took a dip in the balmiest, clearest waters that you ever beheld.

And all this time that you were enjoying yourself every hour of the day, you looked ahead with some premonition of a regret that all this had to be abandoned and left behind. Only the aspect of another exhilarating time aboard ship, and the ties that bind you at home, kept you restrained from settling permanently. Only the feeling that you will return again and again resigned you to be contented to say *au revoir*.

Classified Index of Service and Supplies

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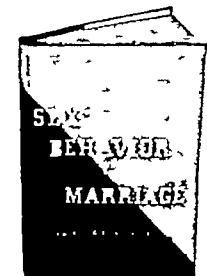
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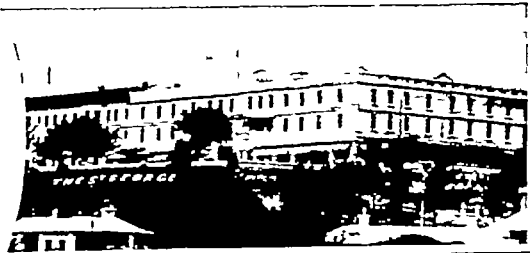


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* * *

Lake Placid Traffic Heavy

The combination of the "Month of Flaming Leaves" and the Whiteface Mountain Memorial Highway is bringing motorists by the thousand into this section of the Adirondacks.

Figures released by J. Hubert Stevens, vice-chairman of the Whiteface Mountain Highway Commission show that from May 15 to September 10 of this year 54,049 people made the ascent of the mountain, and 15,589 cars were checked through the toll gateway. These figures contrast with the entire 1935 season, July 20 to November 15, people, 45,561, cars, 15,061.

On September 10, 1936, the total figures on traffic up the road during the periods that it was open in 1935 and 1936 were people, 99,610, cars, 30,650.

The heaviest single day's traffic in 1935 was on September 1, when 1,825 persons went up the mountain. The heaviest day in 1936 was on September 6, when 2,332 motorists made the ascent.

Search of local newspaper files has brought to light the fact that the first known plan for a road of any sort up Whiteface was conceived in 1898, when J. N. Stowel, then general manager of the Delaware & Hudson Corporation, was asked to prepare for R. M. Oliphant, president, plans for a cogwheel railroad up the western slope of the mountain. Mr. Stowel also proposed building a small hotel at the summit and terminal stations at the base and at the foot of Lake Placid, approximately six miles distant. Two steamers were to ply the lake taking passengers from the dock to the station at the base of the mountain, and tickets were to be sold from New York and points on the Delaware & Hudson directly to the peak of Whiteface.

The estimated cost of this plan was \$100,000. It never got beyond the "plan" stage, however, and was subsequently dropped.

* * *

Next Stop Atlantic City

Its Indian summer in Atlantic City, that season when summer guests start to leave and the fall and winter visitors begin to arrive.

Continued on page xxxviii

should keep in mind the closing date, October 17, and look over their summer vacation snapshots, select the best and enter them in the contest.

* * *

Trips to Resorts Becoming Social Events

British society people have recently created a new kind of train, the 'Society Special', which promises to become as popular in its own exclusive field as the most inexpensive excursions are with factory or white collar workers. The new type of Special is said to have developed in the following manner:

So many prominent people, who know each other, leave at about the same time in the summer season for the fashionable Gleneagles in Scotland that someone suggested that they make a pleasant social event of the trip to and from the famous resort. The idea 'caught on' immediately, with the result that a group of the most prominent people in London engaged a special train for the week-end. The 'Society Special' was composed of sleeping and refreshment cars, and made the trip from London to Gleneagles during the night. The hotel management fell in with their mood and gave the party a private dining and sitting room.

During the following two days the society excursionists, most of whom are enthusiastic golfers, played on the celebrated Gleneagles courses and, on Sunday night, left for London so pleased with the 'Society Special' that they voted to make the trip an annual event.

* * *

Babies by Air

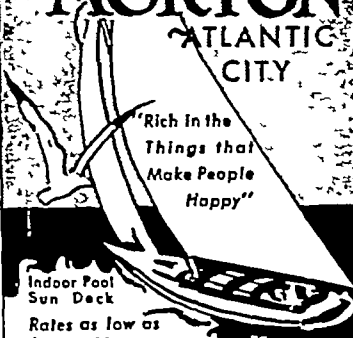
Transportation of infants by air is increasing—the latest example being the case of three months' old Martin Thomas son of Dr. and Mrs. Thomas Ferwerda of the Naval Hospital at the Navy Yard in Brooklyn.

A husky, eight-pound boy, only three months old, he was the youngest smallest child ever to fly from coast to coast without its parents according to United Air Lines officials.

Dr. Ferwerda was attached to Vancouver Barracks in Portland Ore., on May 31, when Martin arrived one month prematurely and weighing only three pounds, two ounces. He spent his first six weeks in an incubator while his parents went to Brooklyn.

Daily bulletins announced that Thomas Martin was thriving in St. Vincent's Hospital Portland on a diet of orange juice and canned milk, under the care of Miss Bee Saunders, a private nurse. In due time it was decided that

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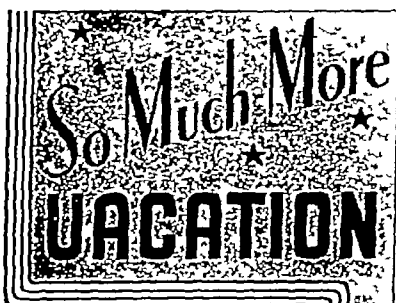
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All private baths with hot and cold sea water

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Close to the Gulf Stream, the resort boasts of a mild climate and summer goes on and on with thousands of bathers still taking advantage of the beach and surf. Visitors who took to the mountains during the warmer months are coming to the seashore for a change of scenery before returning to their homes inland for the winter season.

The Boardwalk, a year 'round attraction, is still well filled with promenaders in the afternoon and early evening. The evening band concerts on the Boardwalk in front of the municipal convention hall will continue until late next month.

The beach will be thrown open to equestrians on October 1 and one of the world's finest bridle paths, a wide flat stretch eight miles long will be available. Meanwhile main land bridle paths, particularly attractive at this time of the year, continue popular. The crisp salt air and warm sunshine make riding on the beach really enjoyable and each day will find hundreds taking advantage of this.

Open from 6 a. m. to 9 a. m., the Boardwalk bicycle lane is getting its usual large quota of cyclists each day. The 'walk, eight miles long, provides what is probably the safest bicycle lane in the country.

The fall golf tournaments are underway on the nearby courses at Northfield, Linwood, Somers Point, Brigantine and Seaview. Each club reports that the weekends bring a huge influx of golf enthusiasts.

Fishing, too, continues good and the visiting anglers are returning to the docks with huge catches. Boats at the Atlantic City Tuna Club and the Inlet Yachting Center will be making their daily trips to sea or up the back bay as long as the fish continue to bite. Tuna are still in these waters as evidenced by the fact that Daniel Stebbins, local sportsman, returned the other day with a 535 pounder caught twenty miles off here.

Hotel grilles, night clubs, ocean piers and theatres are still well patronized as the resort's banner season continues. The start of the convention season finds slightly less than 40 large three and four day gatherings scheduled for the next three months and the resort is preparing to entertain thousands of guests here for business rather than pleasure. Among the larger groups are the American Bakers Association, Annual Safety Congress and Exposition, International Association of Milk Dealers, American Gas Association, and the American Association for the Advancement of Science.

Albert H. Skean, chairman of the Atlantic City Camera Contest, with headquarters on Central Pier, announced that summer visitors

its famous resort hotels Nassau-in-the-Bahamas, lying farther south, is exotically fascinating, not only in its native life, but in the glamour and color of its resort life

These interludes ashore, however, are only a part, and only a small part of the Triangle Cruises. Most popular with the hundreds who have made these voyages are the days at sea aboard the great luxury liner, where every detail has been carefully planned for the comfort and amusement of the passenger, and there are special programs of entertainment.

Frequently according to Mr Findlay passengers find the Bermuda trip too short to fully enjoy the numerous facilities for amusement and entertainment at sea. There are deck sports, built specially wide and unobstructed, with shuffle board, horse-racing and other amusements provided under the supervision of experienced cruise managers. There are great, comfortable lounges, with complete stages and equipment for showing the latest sound pictures. An important, and popular feature, the swimming pool, provides amusement night and day, with small tables where passengers may sit and sip drinks between plunges. In the evening there are the ships' beautiful bars, and the dance floors, specially constructed at a cost of over a quarter of a

million dollars, with twin verandah cafes at either end.

But perhaps one of the best indications of the luxury of the "Queen of Bermuda", as well as her sistership the "Monarch of Bermuda", is the fact that every stateroom, even at minimum is equipped with a private bath—a feature present only on these two vessels.

Regular service to Bermuda will be maintained by the "Monarch of Bermuda", while all of the Triangle Cruises will be made aboard the "Queen". Both islands are definitely established as the two most popular resorts.

In SINUS INFECTIONS!



NICHOLS NASAL SYPHON

Evacuates the sinuses and materially aids in the promotion of ventilation and drainage.

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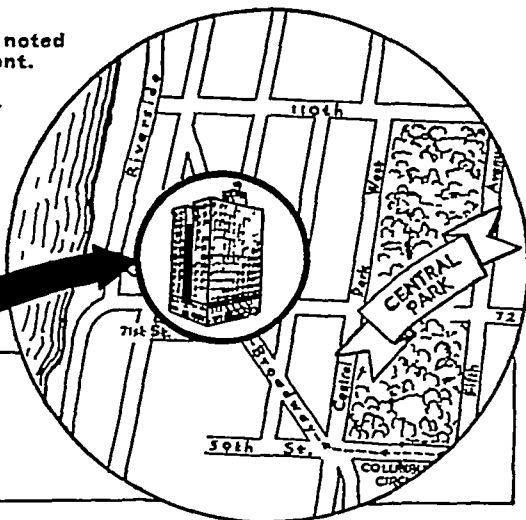
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Convenient location for doctors. A hotel noted for its friendly and refined environment.

A quiet place in a busy metropolis. Ideally located between Broadway and Riverside Drive. Convenient to express subway station, Fifth Avenue buses, and crosstown buses.

The spacious rooms are attractively furnished, outside bathroom adjoins each bedroom.

Single Rooms \$2.50 per day
Double Rooms \$3.50 per day
Special Rates by Week or Month



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228 WEST 71st STREET

NEW YORK CITY

Martin Thomas was strong enough to travel and Miss Saunders who wanted a vacation in the East anyway, assisted him onto a United Air Lines' overnight coast-to-coast plane

"The little darling was no trouble at all," Miss Saunders reported as she passed the infant to his parents

United estimates that several hundred babies will be carried by air this year. Stewardesses provide special food for them and a bassinet is their bed. By radically reducing the travel time, the airplane is becoming a favorite method of transportation for mothers traveling with children, company officials state

* * *

The largest steam locomotives in the world are in operation in the United States. The boiler barrel of one of these locomotives, if all tubes and other obstructions were removed, is large enough to permit any standard automobile to be driven through with room to spare

* * *

Reports filed with the Interstate Commerce Commission show that in 1935 there were 865,098 railroad stockholders. The number of railroad bondholders is not reported but is estimated at one million

Triangle Cruises Again Feature Fall Program

Bermuda and Nassau - in - the - Bahamas, friendly rival resort islands of the Atlantic, will again be the goal of a series of Triangle Cruises sailing October 27, November 5 and November 12 aboard the "Queen of Bermuda," a vessel pleasure-planned for the transportation of passengers only. Each of the new Triangle Cruises, which have annually attained greater popularity, is of seven days' duration, with a full daylight day in both Bermuda and Nassau and six days of luxurious ocean cruising

Conceived to meet a growing demand for longer voyages aboard the two great luxury liners "Queen and Monarch of Bermuda," James N. Findlay, Passenger Manager of the Furness Bermuda Line, has found the traveling and vacationing public is quick to take advantage of a cruise which combines visits to the two famous islands with the many amusement facilities of the Furness Bermuda liners

Variety is the essence of these cruises. Bermuda, most popular of pleasure islands, where the visit is made only two days after leaving New York, offers its beaches, its championship golf courses, and the gay resort life of

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A complete change of scenery and—the fall foliage is gorgeous—beds that induce restful sleep, delicious satisfying food, charming surroundings, friendly service and that delightful atmosphere of gracious living that is found in a Treadway Inn—you will find all of these at



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\$2.50 to \$4.00 Single—\$3 to \$5 Double

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IN NEW YORK—\$11.00 person, double room,
bath; \$13.00 person, single room, bath, including meals and entertainment

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AND TRANSPORTATION

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YOUR DOORWAY TO ALL NEW YORK

Most convenient location. Quiet restful rooms. Unsurpassed service. An exceptional cuisine—meals at modest prices. Bar and cocktail room. Unusually attractive live rates—\$2.50 single \$3.50 double.

241 W 42-- at Times Square-- 250 W 43

tions and their escorts that flavor of play which is an attraction of all continental resorts, so roulette and baccarat have their place here.

If many who come never stir out of the parks, never stray far from the sound of music there are many others who prefer sports to complete their cure. These more active visitors will cross the river to the attractive Sporting Club, set in its flower beds, looking across the Allier on one side and across the golf links to the low Auvergne hills on the other. Two courses here await them, putting greens and croquet grounds offer milder outlets, and just beyond are the numerous tennis courts. Almost weekly competitions stimulate interest in all sports, and at tea-time the tables under the big parasols become animated as a dozen languages are spoken. Fencing tournaments are held in one of the hotels of the spa, or in the Galerie Napoleon each year, regattas are to be watched on the river, fishermen idle in their boats all day, and in the spring and mid-summer two big racing seasons and a horse show draw riders and turf-lovers to these annual Vichy sporting events.

But social life, especially for the ladies often demands more than this. Thus we find tea dances on the Casino terrace, a night club under the Thermal Palace gala dinner-dances at the Carlton annual Automobile Elegance Competitions, and innumerable other attractions.

Children are now coming more and more frequently to Vichy for the cure, and there are those whose parents must have their minds at ease while taking their cure. For them the fine new children's sport field under medical attention has just been completed down in the river parks, where they may pass the entire day in perfect content, and for them costume competitions, Punch and Judy Shows, and other joys are available.

If the mind is of the type that will not leave one tranquil even during a cure, the Historic Museum of Vichy is open and the *Maison du Missionnaire* arranges illustrated lectures on aspects of colonial life.

These are the things that are always happening—and yet we have not touched on the special occasions which brighten the life of a spa, such as provincial fetes with the natives dancing in their pretty Bourbonnais costumes or the Coldstream Guards in their great hats parading through the streets with their band.

There is a tremendous amount of organization necessary to assure the smooth functioning of all these varied aspects of the life of the spa. The direction of the *Compagnie Fermiere*—which rents or "farms" the springs

from the Government under contract to improve the station constantly, the municipal authorities, the fetes committee, the *Syndicat d'Initiative* all these must cooperate if strangers coming from around the world are to find health and pleasure simultaneously in a town like Vichy.

* * *

Four Canadian Pacific Liners to Carry Coronation Passengers

The pageantry and glamor surrounding the coronation of King Edward VIII at Westminster on May 12 next will attract thousands of Canadians and Americans to England, in the Spring of 1937.

Steamship bookings are already being made by many prospective travellers. Liners sailing from Montreal and Quebec during April especially the latter part, are expected to be as well filled as any midsummer crossing.

Four Canadian Pacific sailings during the latter part of April are scheduled to carry the tourists to Great Britain in time for the Coronation and a preliminary tour of the British countryside. These are the *Duchess of York*, leaving Montreal and Quebec April 23 for Glasgow, Belfast and Liverpool, the *Empress of Australia*, leaving Quebec April 24 for Cherbourg and Southampton, the *Duchess of Atholl*

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Pennsylvania Ave. Paul Auchter, Mgr.

in the Western Hemisphere, a fact demonstrated by the fact though Bermuda was conceived originally by the traveling public as a wintering resort, during the past summer it enjoyed the largest number of visitors in its history. During the latter part of March and during April, Mr Findlay said, arrangements have been made to charter the *M V Georgic*, of the Cunard White Star Line, placing in service over the Easter Holidays an augmented schedule for the convenience of spring visitors to Bermuda.

* * *

Vichy, Spa of Many Aspects

The simplest psychology teaches us that a happy man is near to being a well man, and the organizers of life in any watering-resort must therefore take into account that while curing a visitor's bodily ills they must also cure any mental depression which may have resulted therefrom. And just as there must be bathing facilities of varying degrees of luxury to suit different tastes and different purses, so must there be recreation facilities to suit these same tastes and purses.

Thus a spa like Vichy has only begun its work when it has built and equipped its white

palace which proves on inspection to be the Grand Thermal Establishment, its curiously exotic temple, which turns out to be the big modern second-class Callou Baths built on the site of an old Capucine monastery, and its still newer third class baths now under construction down by the river parks. When it has installed a sufficient number of rooms for under-water massage, Vichy douches, obesity reducing, irrigations and mud packs, when it has provided the biggest meconotherapy institute in the country, and turned its attention toward swimming pools, when it has seen to it that its pump-houses are fresh and clean and its *donnouse d'eau* crisp and smiling in their blue and white uniforms, then it must turn its thoughts elsewhere and make provision for those hours when one is not being massaged or baked, when one is not just 'drinking the waters.'

First of all, since people taking a cure should normally walk for exercise, the parks must be made inviting. Vichy offers two parks, one of which is a great rectangle stretching between the principal Springs, called the Park of the Springs. It is at its best in the spring, when the long rows of majestic chestnut trees are loaded with huge pink or white blossoms. The other is the River Parks, which lie down along the river Allier, here an amazing variety of tree and floral life is to be found, and even a tiny zoological garden, with flamingoes in ponds and antelopes in enclosure.

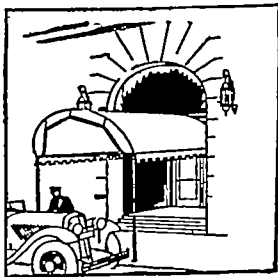
To help keep people out in these parks, as they cannot walk all day be the sites ever so inviting, outdoor concerts are arranged for every morning and afternoon, and it is safe to say that a good proportion of those who take their three weeks cure in Vichy sit under the trees or the pergolas of the Park of the Springs and listen happily to forty-two excellent concerts. They may even come back again in the evening, to the terrace of the Grand Casino which blocks one end of the park, where the third daily open-air concert takes place.

This musical aspect of the spa is further developed inside that Casino, where the summer evenings see a succession of some of the greatest singers, musicians, and orchestra leaders of the world. Lauri Volpi and Martinelli, Sir Thomas Beecham and Karl Elmendorf, Piatigorsky and a hundred others pass before the footlights in this one summer, and alternating with this music are great artists like the regretted Argentina, or plays with their casts fresh from the Paris theatres.

But the Casino must also provide for the beautifully gowned women of two-score na-

When Called to New York for consultation or convention

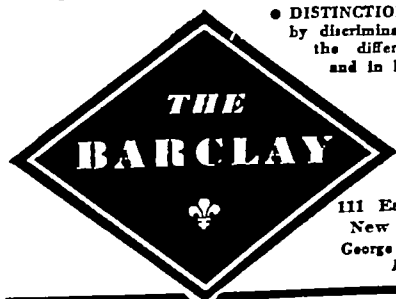
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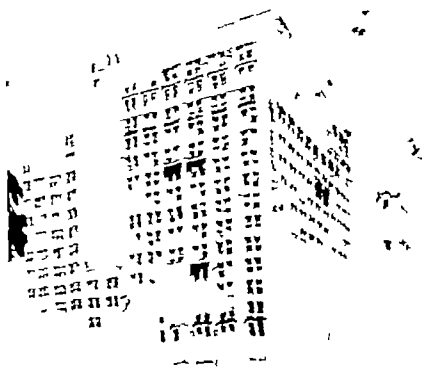
CUNARD WHITE STAR LINERS numbered the following doctors among passengers sailing and arriving during the past few weeks—Dr Bruce MacFayden, Dr Fred H Albee, Dr Albert Inclan, Dr E S L'Esperance, Dr and Mrs A. Moss, Dr John T Batey, Dr and Mrs Herbert W Prince, Dr and Mrs Frank R Bailey, Dr Shepard Krech, Dr W M T Semple, Dr and Mrs J G Taylor, and Dr Earl Le Roy Wood

AMONG THOSE PRESENT recently at the Seaside Hotel in Atlantic City were Dr Drukatz and Dr Irving London of New York City, and Dr James Murphy of Middletown, Conn

THE FOLLOWING DOCTORS from New York and vicinity were entertained at the Castle Harbour Hotel, Bermuda during September—from New York City, Dr and Mrs Bloom, Dr and Mrs George Stuart, Dr and Mrs D Fisher, and Dr and Mrs Waldman, from Brooklyn, Dr and Mrs W H Cook, Dr and Mrs Beacher, and Dr and Mrs H Haas, from Mt. Vernon, Dr and Mrs L Eaton, and Dr W Weinstein, from Buffalo, Dr and Mrs L A Siegel, from Scarsdale, Dr and Mrs L Becker, from Jersey City, Dr De Selma, and from Paterson, Dr and Mrs M Jelson

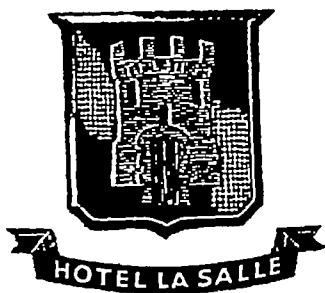
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* * *

Experiences of an American Lady

"Never in all my life had I expected to see anything as beautiful and enjoyable as Bad Nauheim!", writes Mrs Arthur Liebe, of 3433 North Frederick Avenue, Milwaukee, Wisc., about her visit to the famous heart resort in the Taunus Mountains of Germany. "And to think", she continues, "that I went there quite by accident! I have traveled a great deal in Europe, including Germany, but it had never occurred to me to visit Nauheim, thinking as I did that it just was one of the many small though attractive German watering places. However, when I developed heart trouble several months ago and my physician in Milwaukee suggested that I try the cure at Bad Nauheim, I decided to follow his advice, and I am grateful to my lucky star that I did. Nauheim is a veritable paradise, with its abundance of flowers, particularly roses, and its lovely landscaped gardens. And there is every opportunity for the guests to enjoy themselves as they like best.

"The hotel at which I stayed offered all the modern conveniences imaginable, and everyone I met treated me with the utmost friendliness, courtesy, and consideration. I certainly expect to visit Nauheim again next year to take the cure and to renew the many pleasant acquaintances.

"My niece, Mrs Richard Momsen of Rio de Janeiro, who happened to pass through on her tour of Germany, was so enchanted with the place that she promised to spend the best part of her next European sojourn here with me."

* * *

Travel Brevities

THE FIREBOX of one of the largest locomotives in operation in this country is nine feet wide and twenty-two feet long—or one hundred and ninety-eight square feet, approximately the area of a living room in an average small home.

DR. M. A. HARTLEY of New York City was a guest at the Marlborough-Blenheim, during a recent visit to Atlantic City.

NEW YORK DOCTORS visiting Bermuda recently and registering at the St. George Hotel Beach and Golf Club, included Dr Anthony Schwartz of Buffalo, Dr D J Bradley of Amityville, and Dr Nathan Weinstein of Astoria.

RAILWAY DINING CARS serve approximately twenty-five million meals a year—enough to serve every inhabitant of a city of 23,000 with three meals a day for an entire year

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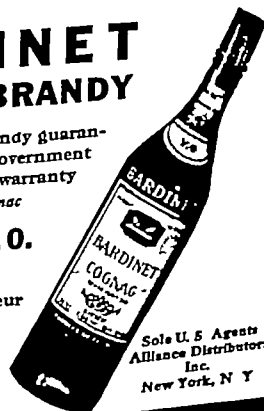
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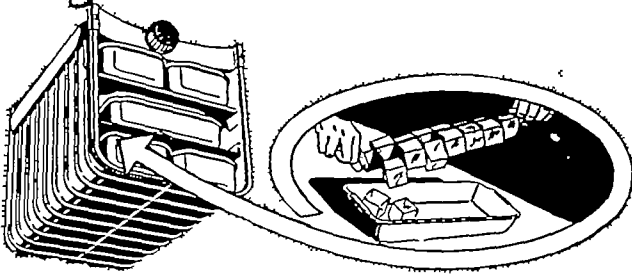
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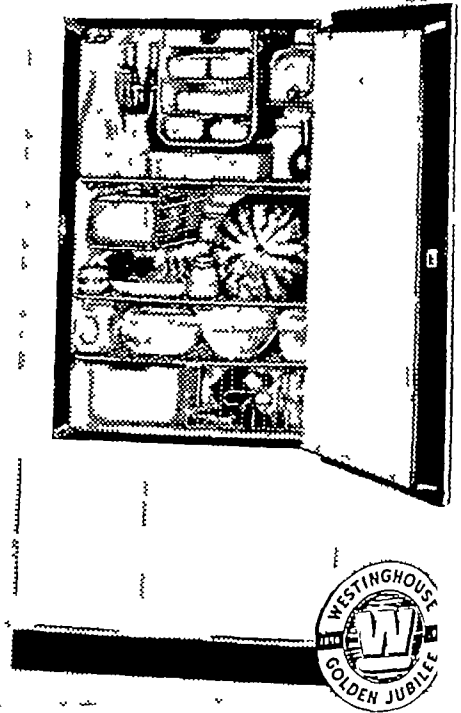
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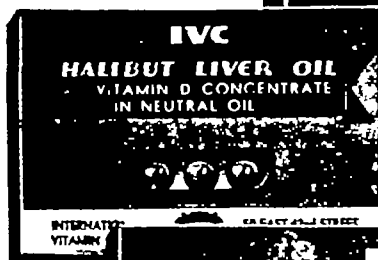
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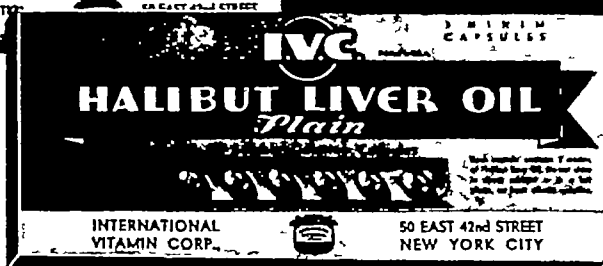
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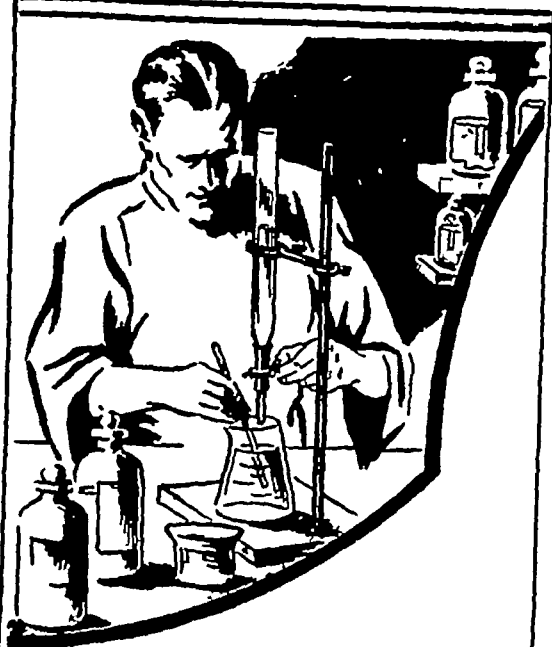


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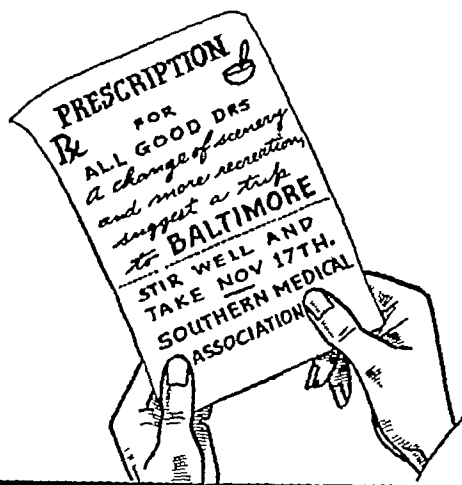
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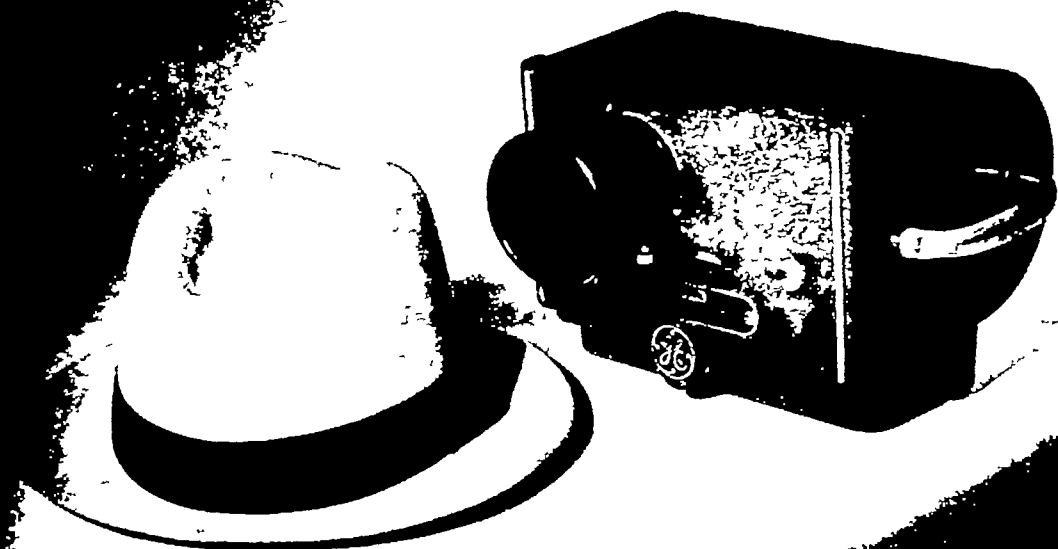
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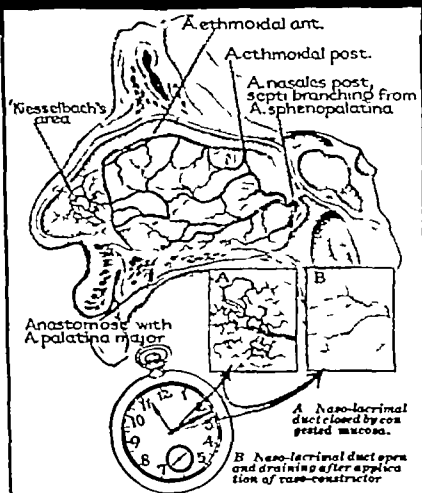
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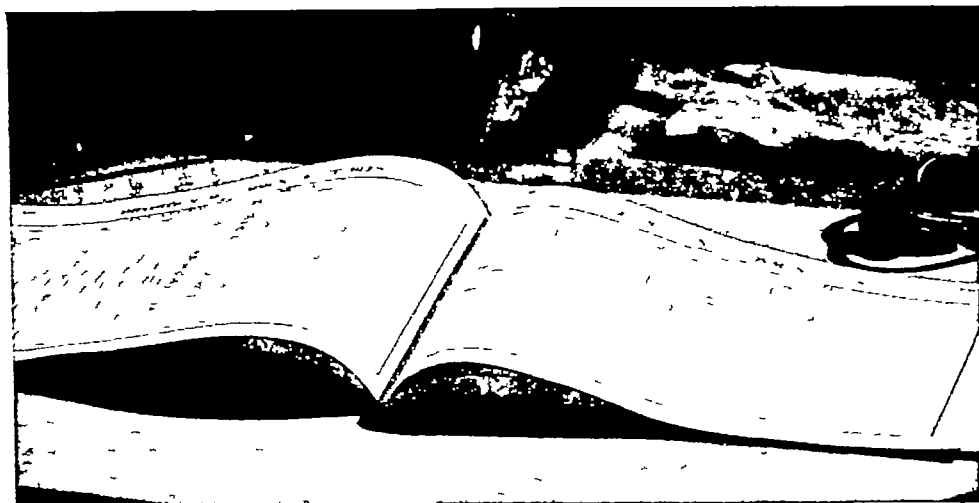
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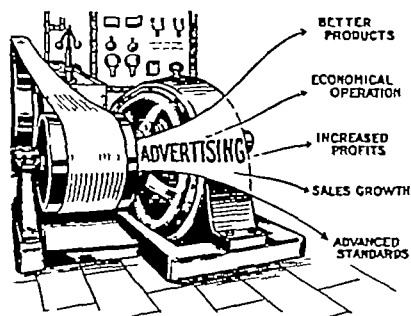
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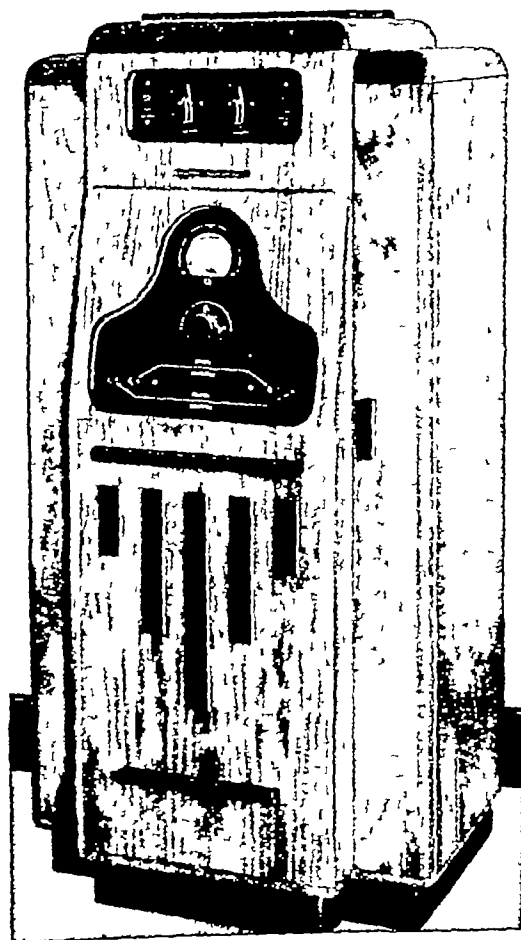
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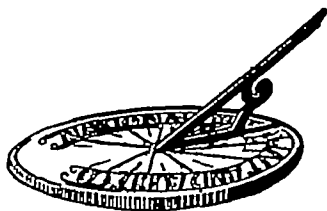
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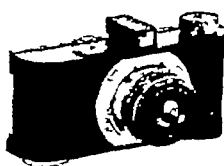
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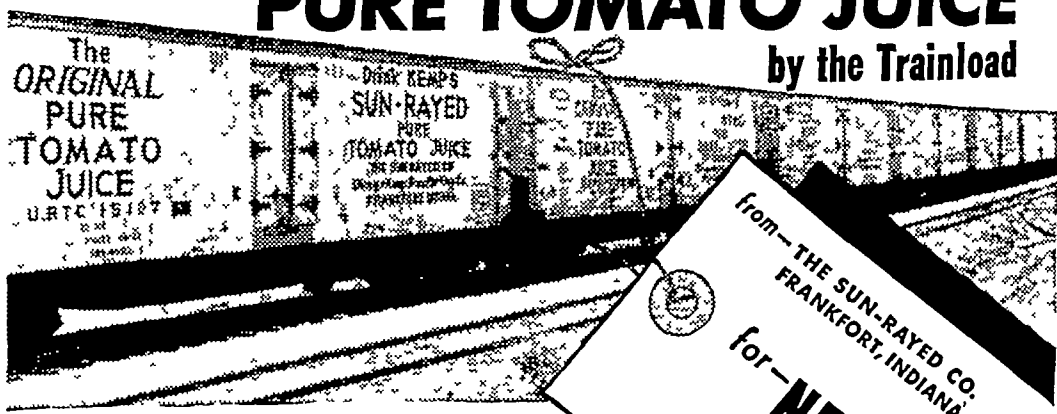
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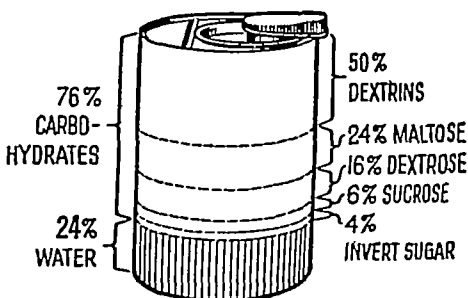
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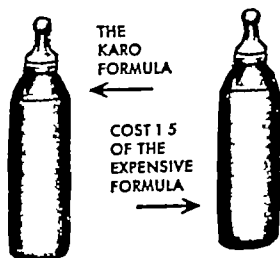
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**THE INDUCED HYPOGLYCEMIC STATE IN THE TREATMENT
OF THE PSYCHOSES**BERNARD GLUECK, M D, *Ossining*
*Medical Director, Stony Lodge***I**

The writer recently called attention to the available statistics concerning the therapeutic effects of an induced state of hypoglycemia in the treatment of schizophrenics¹. These statistical findings are the product of the collaboration of twelve European private and public hospitals employing this method.

The bulk of the Swiss clinical material and some of the Vienna material upon which these statistics are based was made accessible to the writer through a careful study of the clinical records, through personal interview with a considerable number of the recovered patients and through the actual participation, during a period of several weeks in the application of this method of treatment.

In view of this, the writer unhesitatingly recommends the serious consideration of these statistical findings on the part of everyone concerned in the problem of schizophrenia. When, as it appears from these statistics, as many as over three-fourths of the patients who had been ill less than half a year, make complete recoveries, and over sixty-eight per cent of those who have been ill less than one and a half years are similarly benefited, it would appear reasonable to subject every new case of schizophrenia to this form of therapy, even though we know that some of these cases would have made a spontaneous recovery. This attitude seems to the writer entirely justified, notwithstanding the fact that the treatment in question is not entirely free from danger, and that as far as is known, four deaths have occurred in over 300 patients who have undergone this treatment.

At the Cantonal Hospital (Münsingen, Switzerland) where about fifty patients received this treatment during the past year, no serious complications have occurred, and a close study of their staff and ward organization and of the technic strictly insisted upon at this institution, will convince anyone that the danger connected with this method of treatment need not be unmanageable. It is true, however, that the therapeutic method under consideration requires a degree of competence, vigilance, and conscientious attention to minute detail second to none in the entire medical and surgical and psychiatric technic of contemporary medicine. The method is also quite expensive, owing to the large amount of insulin employed, and especially because of the demands it makes upon medical and nursing facilities. Certainly, it cannot be employed outside of a well-organized sanatorium or hospital regime. But when one keeps in mind the medical and social-economic stature of the problem of mental disorder and the share contributed to this problem by the schizophrenias, the difficulties and the dangers of this therapeutic method should be no deterrent to its wide employment at the hands of adequately trained people. Apart from the immediately practical consideration of the promise of checking the trend to chronicity in schizophrenia, and time alone will tell the final story in this regard, this new biochemical approach to psychopathology opens up a great variety of theoretical problems of great significance which might well engage the best minds in the field of biochemical and psychobiological research.

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marked excitement, another injection of the same dose of insulin is administered at 2 P M, but the neutralizing carbohydrates are administered two hours later. The initial dose is then increased daily by five to ten units, six days a week, followed by the so-called rest-day when the treatment is omitted. In the course of this phase 1, the hypoglycemia manifestations begin to appear and, usually, with increasing severity. They consist in a profuse sweating, (large drops) increased flow of saliva of a peculiarly viscid type, yawning, and tremor. Later on in this phase, there frequently appear clonic twitchings of the musculature of the extremities, shoulder girdle, and face. Subjectively, the patients experience a certain sedative feeling, a pleasant feeling of warmth throughout the body, slight paresthesias in the fingertips, palms of hands, and around the mouth. Occasionally they complain of a slight anxious, oppressed feeling around the heart, pounding of the heart, and double vision. How far this first phase has to be carried until the second phase is reached is subject to great variations. Patients have been known to pass into profound coma after the administration of only twenty units of insulin, indeed, one patient had an epileptic seizure after twelve units. On the other hand, the writer observed one patient who failed to show the slightest physical or psychic signs of hypoglycemia after repeated injections of as many as 240 units of insulin. Apart from the well-known fact of the individual differences in sensitivity to insulin, the differences in the symptoms which appear in the hypoglycemic state seem to determine the degree of reactivity of the insulin antagonists, (adrenalin, pituitrin) which affects in turn the progress of the hypoglycemic state. Thus, in cases with considerable muscular irritability and excitement, there is probably a greater tendency towards an adrenalin neutralization of the effects of the insulin. There are, however, differences of opinion as to whether or not an attempt should be made to eliminate this muscular excitation through the administration of sedative drugs, as exist also marked differences of opinion with reference to one's attitude towards a threatening epileptic seizure. Müller³ is of the opinion that the patients are able to exercise considerable volition

in the matter of permitting themselves to sink into the deeper phases of the hypoglycemic state. According to Sakel, old cases of schizophrenia seem to be more resistant to the influence of insulin than recent cases. Indeed, he carries this contention to the point of claiming to be able to tell the duration of a schizophrenic disorder from the patient's responsiveness to the insulin. At any rate, whether or not the patient shows any obvious reaction indicative of the hypoglycemic state, the individual treatment *must always be followed by the introduction of the appropriate amount of carbohydrates*.

Phase 2 The precise point of transition from phase one to phase two is to a large extent arbitrarily determined. One deals here with the so-called shock-phase, the most important stage in the treatment. In practice, this stage is assumed to have been reached when the dosage of insulin produces a degree of coma which no longer enables the patient to drink the sugar solution voluntarily and nasal tube-feeding has to be resorted to. Or, irrespective of the degree of coma and other manifestations of a deep hypoglycemic state, the patient is threatened with a convulsive seizure. While the ordinary shock has been designated "wet-shock," because of the profuse sweating which accompanies it, Sakel is of the opinion that those patients are most likely to develop an epileptic seizure who do not show the customary evidences of a wet-shock. Indeed, they frequently show very few signs of a hypoglycemia until the epileptic seizure suddenly sets in.

It is in this phase of the treatment that one must be ready for emergency intervention, either through the intravenous administration of a thirty-three to forty per cent glucose solution (at times as much as 150 to 180 c c before the hypoglycemia is neutralized), or in addition, also, through the hypodermic administration of adrenalin and at times, of cardiac and respiratory stimulants. The nasal administration of an adequate amount of sugar must, nevertheless, also be carried out. When the patient reaches this shock phase, the somnolence passes into a coma of greater or less depth, the normal reflexes become abolished, pathological reflexes take their place (Babinski, Oppenheim, etc.) and finally there sets

sists in a progressive insulinization of the patient through the daily, intramuscular injection of increasing doses of insulin until the so-called shock-dose is reached in the individual case. Each daily insulinization is, of course, neutralized after the lapse of a period of time required by the individual case through the administration of an adequate amount of carbohydrates. Thus, it happens that the daily observation of as few patients as fifteen (which is about the maximum number that two physicians can properly attend to at one time) furnished in the course of even a very few weeks an uncommonly rich and concentrated clinical experience with the hypoglycemic state, with its great multiplicity of vegetative, neuromuscular, and psychic phenomena. Apart from this, this experience derives an extraordinary uniqueness from the fact that this wealth of clinical pathology is experimentally provoked and abolished at will, so that one gains an impression of the organism's capacity for a reversibility of its reactions, quite unknown in connection with ordinary, physiological, psychological or medical experience. Patients who, a few minutes before the introduction of the neutralizing carbohydrates, were in a state of most profound somatic and psychic disorganization—indeed, one might say, disintegration—begin to change before one's eyes as soon as the introduced sugar begins to be absorbed, and exhibit a gradual, progressive reintegration, often followed by a more or less complete amnesia for everything that transpired during the hypoglycemic state. Close observation of the patient from the onset of the hypoglycemic state on through to complete recovery from it, leaves no doubt about the fact that the entire phenomenon of vegetative and cerebrospinal and psychic morbidity and subsequent recovery is governed by a definite orderliness which derives from the phylogenetic and ontogenetic organismal experience. This fact is of great significance in connection with any endeavor to furnish a theoretical explanation of the dynamics and the *modus operandi* of this therapy and will be discussed in greater detail later in this paper.

II

From a historical standpoint, it should

be stated that the application of this treatment to the schizophrenias developed purely empirically as an outgrowth of Sakel's original employment of insulin in the management of the withdrawal symptoms in morphine addicts.² In connection with this, Sakel observed that the occasionally unavoidable hypoglycemic states which developed in these patients in spite of the fact that the administration of the insulin was accompanied by the simultaneous administration of carbohydrates, had a distinctly quieting effect on motor excitements. He then extended the application of this treatment to various forms of schizophrenic disorders and made the significant discovery that the very condition which one aims to avoid in connection with the insulin therapy of diabetes mellitus, namely, the insulin-shock, proved to be of benefit in the treatment of schizophrenics.

As originally described by Sakel, the treatment consists of four phases, the duration and intensity of each phase being strictly graduated in accordance with the requirements of the individual case. This point cannot be stressed too strongly. The most difficult aspect of the entire procedure is the total unpredictability of the reactions to the hypoglycemic state in different patients, and in the same patient from day to day. While a strict adherence to the minutiae is essential, a free elasticity must, nevertheless, be permitted in order to meet the requirements of the frequently changing indications. Experience alone with the artificially induced hypoglycemic state, in addition to a thoroughgoing acquaintance with the somatic and psychic characteristics of the individual patient are the most dependable guides in this connection.

Phase 1 An initial, intramuscular injection of between twelve to twenty units of insulin, depending on the body-weight and general physical status of the patient is given on an empty stomach between 7 and 7 30 in the morning. The patient is kept in bed, and four to five hours later is given from 150 to 200 gms of sugar in tea, water or milk by mouth, and shortly afterward, his regular mid-day meal. During the rest of the day, the patient is permitted to carry on the usual hospital routine, unless prevented from doing so by certain special conditions. In case of

marked excitement, another injection of the same dose of insulin is administered at 2 P M, but the neutralizing carbohydrates are administered two hours later. The initial dose is then increased daily by five to ten units, six days a week, followed by the so-called rest-day when the treatment is omitted. In the course of this phase 1, the hypoglycemia manifestations begin to appear and, usually, with increasing severity. They consist in a profuse sweating, (large drops) increased flow of saliva of a peculiarly viscid type, yawning, and tremor. Later on in this phase, there frequently appear clonic twitchings of the musculature of the extremities, shoulder girdle, and face. Subjectively, the patients experience a certain sedative feeling, a pleasant feeling of warmth throughout the body, slight paresthesias in the fingertips, palms of hands, and around the mouth. Occasionally they complain of a slight anxious, oppressed feeling around the heart, pounding of the heart, and double vision. How far this first phase has to be carried until the second phase is reached is subject to great variations. Patients have been known to pass into profound coma after the administration of only twenty units of insulin, indeed, one patient had an epileptic seizure after twelve units. On the other hand, the writer observed one patient who failed to show the slightest physical or psychic signs of hypoglycemia after repeated injections of as many as 240 units of insulin. Apart from the well-known fact of the individual differences in sensitivity to insulin, the differences in the symptoms which appear in the hypoglycemic state seem to determine the degree of reactivity of the insulin antagonists, (adrenalin, pituitrin) which affects in turn the progress of the hypoglycemic state. Thus, in cases with considerable muscular irritability and excitement, there is probably a greater tendency towards an adrenalin neutralization of the effects of the insulin. There are, however, differences of opinion as to whether or not an attempt should be made to eliminate this muscular excitation through the administration of sedative drugs, as exist also marked differences of opinion with reference to one's attitude towards a threatening epileptic seizure. Müller³ is of the opinion that the patients are able to exercise considerable volition

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in a total abolition of all reflex activity. Occasionally one observes a transitory hemiplegia, which, like the aphasia that may develop on awakening, disappears after a short time. It is in connection with these manifestations that one can observe the greater vulnerability of the dominant hemisphere. Pallor, tachycardia, sometimes marked bradycardia, fluctuations in blood pressure, disturbances in respiration, marked twitchings, and clonic movements of a coarser type, sometimes very marked tonic attitudes and movements reminiscent of the behavior of the decerebrated animal, can also be observed. Of particular interest and significance are manifestations during this phase in the nature of an acting out and living out of tendencies which seem to have a distinct bearing on the content of the patient's psychosis. The most difficult point in the entire treatment is the determination of how long to keep the individual patient in this condition of insulin shock. On the one hand, it is desirable to maintain this stage as long as possible, since it seems to be the profundity and duration of the coma and the intensity of the affective reaction that determines the therapeutic progress. On the other hand, the patient's physical condition may demand the immediate neutralization of the hypoglycemic state, irrespective of the requirements of the therapy of the mental condition. Under ordinary conditions, the patient awakens within five to fifteen minutes after the sugar solution reaches the stomach, in rare instances, especially where the shock has been protracted, within half an hour. The intravenous administration of glucose usually produces the desired effect immediately. There is no general rule as regards the number of shocks the individual patient has to experience. Patients have received as many as forty and more shock treatments. One is naturally guided here by the progress of the improvement in the individual case. The question as to when one can definitely state that the patient happens to be one who cannot be influenced by the insulin therapy, is still an open question demanding much more experience than is at present available for a definite answer.

Before proceeding to a consideration of phases three and four, reference should be made to Sakel's latest paper,⁴ in which

he attempts to formulate more precise rules for the administration of the treatment in each of the three types of schizophrenia which he recognizes, namely, the paranoid, catatonic, and the catatonic excitement. He calls attention again to his hypothesis that the hypoglycemia suppresses the momentarily most active part of the psyche, and thus makes possible the emergence of the latent aspects thereof, which then supplants to a greater or less extent the acute existing manifestations which have already been repressed by the insulin. One might visualize the situation somewhat as follows: before the stage of complete coma is reached, the hypoglycemia inhibits and delimits the existing (psychotic) state and converts it into its opposite (insofar as one might speak at all of opposites).

He maintains that he has actually been able to observe in many, if not all cases, that a hallucinated and delusional patient would, for instance, manifest a brief period of complete lucidity just before falling in a deep coma. The same patient later on, after the improvement had progressed far enough to enable him to behave quite normally when not in the hypoglycemic state, will during the shock become acutely psychotic again for a brief period before sinking into deep coma. He calls this the activated psychosis. He further refers to the strong tendency to the fixation of the condition which exists at the time of the interruption of the hypoglycemia. In the main, this refers to conditions of passivity and activity, of excitement and calm. Thus the interruption of the shock in the case of an excited catatonic during a state of calm and passivity would tend to establish a similar condition, also, for the non-hypoglycemic phases. Conversely, in the case of a stupor, the interruption of the shock during a state of activity and excitement, would tend to continue to activate the patient outside of his hypoglycemic state. He accordingly stresses very much the importance of determining the most advantageous moment for interrupting the shock. On the basis of the foregoing considerations, he advises the following procedure in the three different types of schizophrenia.

1 For those cases which are predominantly paranoid in character, the original

technic continues to hold good, inasmuch as the hypoglycemic state is permitted to reach a degree of deep coma and the shock is never interrupted during the manifestation of an activated psychosis, unless the physical condition of the patient calls for an interruption. The aim here is essentially as complete as possible a suppression of the existing psychotic state and the favoring of as complete an amnesia as possible.

2 In the case of patients who are predominantly stuporous, the aim should be during the first part of the second phase of the therapy to determine the best moment for the interruption of the hypoglycemia, namely, at the first indications of an activation either in the form of some release phenomenon or an excitement, in order to establish a condition which is as much as possible in contrast to the existing stupor. Should the signs of an activation be overlooked and the patient permitted to sink into a deeper coma, it may result in definite harm to the patient.

The foregoing remarks, however, must not be taken too literally, since stuporous patients have been known to recover only after experiencing states of deep coma. It may be that one is dealing here with types of stupor which depend more on active hallucinatory and delusional factors than on inhibitory factors. Owing to the much greater difficulty in treating these patients, it might be well to quote Sakel's instructions regarding these cases verbatim. He says

We begin with fifteen to twenty units and increase by five to ten units daily. The fundamental difference in method between these patients and the paranoid types is that these patients must be most carefully observed for signs of activation. When these evidences of activation occur, the problem is to determine the most favorable moment in the individual case for the termination of the shock. The insulin dose should be, if possible, the shock-dose, that is, sufficiently adequate to lead to a deep coma if the patient were permitted to reach this stage.

This activation may manifest itself in various ways. It may begin with slight indications of release, which become more marked from day to day, it may be initiated in the form of a more or less complete awakening, or it may take the form of an emergence of a delusional or hallucinatory content which had hitherto been kept in subjugation by the stupor, thus converting a non-productive psychosis into a productive one. All these various manifestations were found to be more favorable for the future

course of the psychosis than the stupor. The further progress of the treatment consists in an endeavor to convert the stupor into a productive psychosis and to fixate the same. After this newly achieved situation continues to manifest itself in the non-hypoglycemic state of the patient, he can then be subjected to the deeper phases of the shock—the coma—as in the case of the paranoid patient. It should be, furthermore, added that whereas in the case of the paranoid patient we endeavor to eliminate every possible external stimulus during the hypoglycemic state (in order to avoid adrenalin neutralization²), we do not follow this rule in the case of the stupor. On the contrary, we stimulate the patient through questioning him, shaking him, and in various other ways which might favor the secretion of adrenalin.

Sakel also cautions here not to take the foregoing suggestions too literally, but to rely on such hints as the individual patient may furnish.

As regards the catatonic excitements he states that from the very beginning he and his associates were impressed with the fact that this type of patient did not respond as favorably as the others to the deep hypoglycemic state. Neither did the course of the disorder during the treatment show the regularity of progression as in the other cases. It was very difficult in these cases to maintain the progress achieved, the patients repeatedly showing relapses, in contrast to the paranoid patients where one could with certainty maintain that the progress made would be retained. He proceeds in treating this type of patient by starting as in the others with fifteen to twenty units, but in contrast to the others, he administers this dosage two or three times daily (with proper interruptions as already indicated) because of the need of quieting the excitement. The dose is increased daily by five to ten units. When the patient quiets down, the hypoglycemia is induced only once daily and during the early stages in the treatment is terminated through the mere administration of food, later through the usual administration of sugar. When the shock-dose is reached, that is to say, a dose adequate to produce deep coma after a maximum of five hours, the difficult task begins of determining precisely the duration of the shock. The most favorable point for interruption seems to be the moment of maximum somnolence, and just before the patient sinks into a deep

coma In general, coma should be avoided in these cases and an effort should be made through active urging of the patient to make him drink the sugar solution The difficulty here lies in the administration of the sugar solution, that is in the necessity of avoiding the excitement and exertion incident to nasal feeding in a patient who is not sufficiently comatose and who is, nevertheless, in such a state of somnolence that he cannot be persuaded to drink the solution, or perhaps is actually already unable to perform the act of swallowing

The excitement incident to the nasal feeding in these patients who are still capable of resisting the procedure, seems to be very detrimental to the general course of the treatment and should be avoided whenever possible, even at the expense of permitting a patient to sink into a deeper state of coma than is otherwise desirable One sees, therefore, how much more difficult the treatment of these patients is in comparison with the other types This accounts also for the fact that the results are not as favorable here as in the paranoid and stuporous patients

Phase 3 This is merely a transition stage between 2 and 4, and is really limited to a designation of the usual and the occasionally unavoidable rest periods in the treatment, that is the usual seventh day each week, and such other interruptions as are called for because of intercurrent febrile and other somatic disorders After an epileptic seizure, the patient is usually allowed two or three days freedom from treatment

The duration of the second phase, as has already been indicated, must be adjusted to the requirements of the individual case, essentially until the psychotic manifestations both in and outside of the hypoglycemic state have disappeared It should also be mentioned at this point that while the shock-dose once reached should be maintained throughout the second phase, it sometimes happens that the patient develops an insulin sensitization and the same effect can be produced with much smaller doses

Phase 4 This only refers to the cases in which the preceding treatment led to the desired result, a remission of all symptoms, and is supposed to serve as a means of consolidating and stabilizing the gains

achieved Much smaller doses of insulin are administered than in phase two, ten to thirty units, and the carbohydrates are administered no later than two hours after the insulinization Naturally, the patient is not permitted to reach a deep state of shock The treatment is continued until the patient's discharge from the institution

III

As has already been stated, this therapy is not without danger, but last year's experience at Munsingen proves without much doubt that these dangers can be entirely obviated or certainly reduced to a minimum when proper precautions are taken Müller, in discussing this phase of the subject in the paper already referred to, says

The administration of the insulin therapy is rendered difficult not only because of the individual variations in sensitivity to this agent, and a sensitization which frequently occurs in the course of the treatment, but also because of the fact that our knowledge concerning the genesis of the initial hypoglycemic manifestations as well as of the insulin shock is very inadequate. Certainly, no direct relationship exists between the tangible, clinical manifestations of the hypoglycemic state and the actual blood-sugar state To be sure, a drop of the blood-sugar to below 60 mg per cent is an essential precondition for a clinical reaction On the other hand, one repeatedly sees cases in whom a drop of the blood-sugar to 30 mg per cent, and lower, gives rise to no clinical manifestations In these cases, the clinical manifestations set in only after the administration of much larger doses of insulin, which, however, does not cause a further drop in the blood-sugar content Furthermore, the deepest stage of insulin shock does not at all necessarily correspond with the lowest point in the blood-sugar content, on the contrary, the blood-sugar begins to rise at this particular point in most cases Thus, the blood-sugar picture furnishes no indication as to the kind of clinical manifestations one might expect. Most likely it seems to be the case that a large part of the hypoglycemic symptoms are due not to the hypoglycemia as such, but to the reaction to it, that is, to the compensatory secretion of adrenalin, whether this be considered as primarily toxic or secondarily conditioned by the hypoglycemia. According to Kugelman, the pounding of the heart, tremor and sense of oppression are adrenalin symptoms, whereas the weakness and sweating are the

direct result of the hypoglycemia. The spasms probably also belong to the adrenalin manifestations. Other authors attribute this to the low sugar content of the spinal fluid. Unger believes this to be due not so much to the low sugar-content as to the rapidity of the drop.

Naturally, one deals with serious matters where it concerns the profound comatose shock as well as the epileptic seizure. In addition, there is the possibility of a number of other unpleasant albeit less frequent complications, such as collapse, glottal spasm, vomiting during the state of unconsciousness, with the danger of aspiration. The possibility of the so-called after shock should likewise not be neglected. One has to deal here with a spontaneously developing hypoglycemia which sets in a number of hours after the induced hypoglycemia had been properly neutralized by the administration of carbohydrates. It is to be expected that it is more likely to occur in cases where part of the administered carbohydrates has been lost through vomiting. In the single instance of this character which occurred at Münsingen, the carbohydrates were administered at 11.30 A.M. without any unusual difficulty. The patient felt entirely well during the afternoon, but at 7 in the evening he sank into a profound comatose state with severe twitchings of the muscles, which demanded the immediate intervention with adrenalin and intravenous glucose.

In view of the experiences of internists in connection with spontaneous hypoglycemia in the treatment of diabetes, the condition of the heart deserves particular attention. One notices almost regularly in the course of the hypoglycemia, a rise in blood pressure (usually an increase in systolic and slight drop in the diastolic). Very frequently, furthermore, there occurs a tachycardia up to 120, which occasionally persists for a number of hours, even until the evening, but which regularly disappears by the following morning. Much more rarely one observes a bradycardia. Apart from this, no other clinical manifestations of cardiac disorder could be established. On the other hand, Chatel and Palisa were able to demonstrate slight cardiographic changes in connection with the Vienna material, but they attributed no significance to this.

Hadorn carried out a much broader investigation along these lines in connection with the clinical material at Münchenbuchsee, as well as on animals. He was able to demonstrate definite electrocardiographic changes, which were, however, reversible, so that no direct damage to the heart as result of the individual shock could be established. Nevertheless, he leaves the question of the possi-

bility of a lasting injury to the heart undecided, and stresses the point that the circulatory system must be most carefully watched during the insulin therapy, not only in those actually suffering from heart disease but also in every patient falling within the arteriosclerotic period of life. In this connection, one might also refer to the experiments carried on by Schmid, who subjected animals to an insulin therapy similar to the one under consideration and found only slight reversible cerebral damage even after repeated epileptic seizures.

In view of the obscurity which still surrounds some of the basic issues involved in this entire question, any theoretical explanation of the dynamics and *modus operandi* of this therapy must be highly tentative in nature. Nevertheless, it is decidedly helpful to have some working hypothesis in mind, even though a more dependable factual experience might call for radical modifications of theory in the future. Sakel adheres strictly to a biochemical hypothesis which he endeavors to sum up in the following three propositions.

- 1 The insulin puts a barrier between the cell and external stimuli, thus putting the cell at rest and enabling it to recuperate. He assumes that by keeping the pathologically conditioned cell-pathways in abeyance, the original, normally conditioned pathways have a chance to re-establish themselves.

- 2 The profound, almost annihilating assault which the cell experiences during the insulin shock perhaps actually eliminates the recently established pathological pathways, and in the course of recovery from the shock, only the older, well-established pre-psychotic pathways become re-animated.

- 3 A general detoxication of the entire organism through the effect of the insulin on the entire metabolic status.

He bases these generalizations on a theory of cell activity which he originally propounded in connection with the application of insulin to the management of the withdrawal symptoms in morphine addicts. We cannot submit here a detailed statement of this theory. This much, however, must be at least indicated namely, that he assumes a progressive development in the cell of pathways which are specific to certain stimuli. There develops in time a sort of hierarchy of pathways, the older in time of origin naturally being the more resistive to insult. Through the elimination of

the existing contemporary pathological pathways, the older, normal ones have a chance to reassert themselves and adaptation to reality becomes normal again. I hope, in this greatly abbreviating what he says in the theoretical portion of his publications, I am not misquoting him. At any rate, whatever he has to say theoretically is prefaced by unmistakable assertions concerning the tentativeness of its nature.

IV

The writer has no definite opinion concerning the degree of validity of Sakel's theoretical views. He has a strong urgency, however, to express, very tentatively, to be sure, some general impressions gained from observing these patients in the insulin shocks, and certain thoughts to which these impressions give rise. The great play of phenomena of disorganization and reorganization which passes before one's eyes in observing these patients impresses one not only with the orderliness in the appearance and disappearance of these manifestations already alluded to, but also with the great vulnerability of the organism in the course of the hypoglycemic state. Perhaps it should be designated as a great impressionability, the patients clinging to those who first come within their vision like helpless children. It is this fact which probably accounts also for the rapid improvement in the accessibility and transference capacity of the schizophrenics under this treatment, a phenomenon observed by every investigator and particularly stressed by Bychowski in his paper before the recent Psychoanalytic Congress at Marienbad. It is apparent that this state of heightened impressionability and suggestibility is of great significance, negatively as well as positively. Patients who had made considerable progress towards recovery have been known to experience a serious setback in consequence of psychic traumata encountered during this period. It is conceivable that the opposite is also true, namely, that this phase can be exploited to the patient's benefit through proper suggestions.

Sakel repeatedly stresses the importance of psychic factors during the stage of convalescence, and the writer has convinced himself to his own satisfaction that although this therapeutic approach

is essentially of a biochemical nature, its effects insofar as they lead to a modification of psychopathological states can in no way be looked upon as identical with those characteristic of a strictly causal therapy, such, for instance, as the psychoanalytic therapy of a hysterical phobia. On the contrary, one gains the impression of a radical and fairly rapid generalized disturbance of the vegetative, neurological, and psychic integration of the patient which calls forth in its turn a rapid reintegration immediately upon the neutralization of the hypoglycemia. But in addition to the important role which the sugar metabolism plays in this catabolic and anabolic process, psychic factors seem also to be of considerable significance.

Thus it is highly significant that in addition to the orderliness in the appearance and the disappearance of the morbid manifestations already alluded to, the impression is inescapable that the reactions which these patients show in the hypoglycemic state are not altogether meaningless from the point of view of the nature and content of the psychosis for which the patient is being treated. It seems as though the hypoglycemic state not only creates general conditions for a new reintegration but that within the scope of this general preparedness there is a possibility for a more specific settlement of certain organismal or perhaps personality problems and for a more specific reorientation to reality. From the relatively great multiplicity of clinical observations which lead me to this impression, (in the course of one month I was able to observe about 400 hypoglycemic states in about twenty patients) I will mention a few as illustrative of the point I am endeavoring to make.

CASE 1 A woman in her early thirties, whose paranoid schizophrenia was of about two years' duration, was admitted to the hospital in a delusional and hallucinated state, and showed in addition a particularly morose, angry, negativistic, and suspicious demeanor which rendered her quite wholly inaccessible. She shunned every contact with others and spoke with a peculiarly distorted intonation and articulation so that she could hardly be understood. The general impression she made was that of an angry, melancholy patient with irritability and moroseness, and extreme physical and

psychological tenseness During one of her very earliest hypoglycemic states she became hilariously excited, laughed and shouted and threw herself about in bed in a wholly abandoned manner, calling for champagne, unconcerned about exposing herself, and what was particularly impressive was that for the first time she abandoned her peculiar articulatory and tonal distortion, and spoke clearly and accurately, although in a somewhat childishly coy manner On awakening, she had a total amnesia for what had transpired, but was noticeably less negativistic and more approachable. She repeated this performance with slight variations in the degree of abandon several days in succession during the hypoglycemic states, and the impression as one watched her was inescapable that she was having a very good time, indeed, during these states of abandon and release Coincident with this, her attitude and demeanor during the non-hypoglycemic periods showed very definite improvement

CASE 2 A young girl who gradually developed a catatonic stupor preceded by vague delusional and hallucinatory preoccupations, and whom it was my privilege to observe almost from the very beginning of the treatment until she was discharged with a good remission three weeks later, exhibited for a number of days within the hypoglycemic state a most intense oral preoccupation Beginning with an ordinary Schnautzkrampf, her lips, tongue, and cheeks would then become engaged in a most extraordinary exploitation of sucking of tongue, smacking of lips, evertive and invertive movements of lips, which would go on for an hour or two while she was in a state of profound unconsciousness In addition to this, an occasional aggressive attitude was noticeable, especially of fists and arms, and on several occasions upon awakening, she actually had brief outbursts of combativeness Neither in her prepsychotic state, nor during her psychosis did this patient show the slightest tendency to aggressiveness or combativeness On the contrary, according to her mother's statement, she was always of a meek, submissive nature, carrying willingly more than her share of work at home and later at a hotel where she was employed up to the onset of her illness

In both of the above patients the hypoglycemia released activities of a highly emotional coloring which were foreign to the patients' usual state, but which unquestionably constituted an element in the background of the patient's psychosis

CASE 3 An intensely paranoid, young German Jew, the content of whose psychosis was largely concerned with the current Jewish situation in Germany, was observed in a Swiss private sanatorium during practically a whole hour in an almost unbelievably intense sadistic-aggressive state of muscular thrashing about, gnashing of teeth, angry facial distortion and angry grunting, requiring the services of two attendants to keep him in bed, all of this in a state of complete unconsciousness On awakening after the administration of carbohydrates, he exhibited a happy, slightly hilarious attitude and reiterated several times "Don't you think I'm brave, I know I am brave." Soon afterwards, he was quite natural in his demeanor, had a complete amnesia for his activity during the hypoglycemia, and I was told by his physician that he has been showing marked improvement coincident with the intensity of his hypoglycemic discharges

The writer has had many occasions in the past to defend the principle of teleology in the manifestations of the psychotic, but only rarely was he more strongly impressed with the quality of meaning and purpose than in the reactions of some of these patients while in a profound state of unconsciousness during the hypoglycemia

CASE 4 An intensely severe compulsion-neurotic, whose neurosis has existed for over thirty years and whose confinement to a sanatorium became unavoidable because of the complexity and extent of his defensive maneuvers in speech and action, was observed just as he was emerging from the hypoglycemic state. His facial expression of bewilderment and intense fear denoted unmistakably a state of profound anxiety Shortly afterwards, when he had completely attained his normal state of consciousness, he was asked to describe his state of anxiety He was a very intelligent person, and he drew a most interesting distinction between the anxiety he had been thoroughly familiar with in the course of his compulsion-neurosis and this "deadly indescribably painful, panicky helplessness" which went with the hypoglycemic anxiety Is it not conceivable that his customary, life-long neurotic anxiety, to the management of which he has devoted practically a lifetime of thought and energy, might experience quite a deflation when exposed to a comparison with the repeated states of real anxiety of this most intense nature which he experiences during the hypoglycemia?

At any rate, this patient is showing in his free periods a rather interesting turn of

the existing contemporary pathological pathways, the older, normal ones have a chance to reassert themselves and adaptation to reality becomes normal again. I hope, in thus greatly abbreviating what he says in the theoretical portion of his publications, I am not misquoting him. At any rate, whatever he has to say theoretically is prefaced by unmistakable assertions concerning the tentativeness of its nature.

IV

The writer has no definite opinion concerning the degree of validity of Sakel's theoretical views. He has a strong urgency, however, to express, very tentatively, to be sure, some general impressions gained from observing these patients in the insulin shocks, and certain thoughts to which these impressions give rise. The great play of phenomena of disorganization and reorganization which passes before one's eyes in observing these patients impresses one not only with the orderliness in the appearance and disappearance of these manifestations already alluded to, but also with the great vulnerability of the organism in the course of the hypoglycemic state. Perhaps it should be designated as a great impressionability, the patients clinging to those who first come within their vision like helpless children. It is this fact which probably accounts also for the rapid improvement in the accessibility and transference capacity of the schizophrenics under this treatment, a phenomenon observed by every investigator and particularly stressed by Bychowski in his paper before the recent Psychoanalytic Congress at Marienbad. It is apparent that this state of heightened impressionability and suggestibility is of great significance, negatively as well as positively. Patients who had made considerable progress towards recovery have been known to experience a serious setback in consequence of psychic traumata encountered during this period. It is conceivable that the opposite is also true, namely, that this phase can be exploited to the patient's benefit through proper suggestions.

Sakel repeatedly stresses the importance of psychic factors during the stage of convalescence, and the writer has convinced himself to his own satisfaction that although this therapeutic approach

is essentially of a biochemical nature, its effects insofar as they lead to a modification of psychopathological states can in no way be looked upon as identical with those characteristic of a strictly causal therapy, such, for instance, as the psychoanalytic therapy of a hysterical phobia. On the contrary, one gains the impression of a radical and fairly rapid generalized disturbance of the vegetative, neurological, and psychic integration of the patient which calls forth in its turn a rapid reintegration immediately upon the neutralization of the hypoglycemia. But in addition to the important role which the sugar metabolism plays in this catabolic and anabolic process, psychic factors seem also to be of considerable significance.

Thus it is highly significant that in addition to the orderliness in the appearance and the disappearance of the morbid manifestations already alluded to, the impression is inescapable that the reactions which these patients show in the hypoglycemic state are not altogether meaningless from the point of view of the nature and content of the psychosis for which the patient is being treated. It seems as though the hypoglycemic state not only creates general conditions for a new reintegration but that within the scope of this general preparedness there is a possibility for a more specific settlement of certain organismal or perhaps personality problems and for a more specific reorientation to reality. From the relatively great multiplicity of clinical observations which lead me to this impression, (in the course of one month I was able to observe about 400 hypoglycemic states in about twenty patients) I will mention a few as illustrative of the point I am endeavoring to make.

CASE 1 A woman in her early thirties, whose paranoid schizophrenia was of about two years' duration, was admitted to the hospital in a delusional and hallucinated state, and showed in addition a particularly morose, angry, negativistic, and suspicious demeanor which rendered her quite wholly inaccessible. She shunned every contact with others and spoke with a peculiarly distorted intonation and articulation so that she could hardly be understood. The general impression she made was that of an angry, melancholy patient with irritability and moroseness, and extreme physical and

their experiences After interviewing a fairly large number of recovered patients, one gains the impression that these recoveries divide themselves roughly into two types, the one with a distinct emphasis on the virtues of repression, and the other with a definite preference for the so-called working through and reintegration

Be that as it may, the foregoing tentative theorizing suffers a good deal from the fact that patients have been known to recover in consequence of the insulin therapy, whose hypoglycemic state had never reached the profundity of coma, and had never given rise to any of the expressive phenomena mentioned above The only things these patients had in common with the others who did show the more profound reactions was the hypoglycemia. How is one to interpret the therapeutic dynamics here? Wilder in a recently published monograph which has for its aim a delineation of the disease-entity "Zuckermangelkrankheit" (sugar starvation disease) gives ample evidence of the many problems which still remain unsolved in this field To be sure, he deals primarily with the so-called spontaneous hypoglycemia But the situation cannot be much different in those deliberately induced What is undeniable in both cases is the profundity and gravity of the assault upon the organism of an extensive and sudden sugar deprivation It is to be expected that in the case of the spontaneous hypoglycemia, because of the organism's greater opportunity for neutralizing efforts, the assault is not likely to be as grave as in the case of the sudden draining of the organism's sugar through the sudden and unexpected introduction of large quantities of insulin It is likewise to be expected that such an event, in addition to provoking the consequences of a sugar drainage, should also stimulate a sudden mobilization of the available forces by way of the endocrinal antagonists to insulin (adrenalin, pituitary), which in its turn adds to the organism's capacity to control and master impulses

Whatever one's leanings may be regarding the pathogenesis of the so-called functional psychoses, there can be no difference of opinion regarding the central therapeutic aim in these disorders One strives to bring about in these patients such changes in the personality (ego) as

will enable it to control more efficiently its impulses Even a protracted and deep psychoanalysis aims ultimately at such a strengthening of the ego Speaking strictly psychiatrically, one aims at a better and more accurate understanding of his difficulties on the part of the patient and at a greater adjustive capacity Perhaps this repeated, profound assault on the organism through depriving it of its sugar actually does lead to a kind of reconstructive effort, perhaps by way of a hormonal rearrangement, the result of which is a strengthening of the organism's capacity for meeting the requirements of biological and social living The fact remains, that some patients do achieve excellent recoveries (I have in mind particularly two female patients whom I had the privilege to examine thoroughly) without exhibiting any of the dramatic manifestations of the hypoglycemic state mentioned

But when this factor of a strengthening of the ego in the manner described above is taken together with the other factors of repression and catharsis which the hypoglycemic state appears to favor, I think a fairly suggestive theory is at hand for the explanation of the therapeutic effects of the insulin therapy The entire situation might then be viewed as a highly condensed recapitulation of the process by means of which the fate of ego-dystonic impulses is determined, a process which takes place normally, in the course of ontogenetic development, and artificially, in the course of a psychoanalytic therapy

If the above theoretical considerations have any validity, at all, at least two highly significant conclusions must follow In the first place, the therapy should be designated a cellular therapy instead of a therapy of schizophrenia There already exists some evidence of the therapeutic worth of this therapy in psychopathological disorders other than schizophrenia (compulsion-neurosis, depressive states, acute undifferentiated excitements, certain addictions) In the second place, while it is true that the therapeutic means is of a strictly biochemical nature, the process depends to a high degree for its success upon a nicety of psychological management Even in connection with the primary task of determining the extent and depth of the hypoglycemic state in individual patients from day to day a thorough

events On the one hand, he is not so intensely dominated by his compulsive thoughts and actions as formerly, while on the other hand he writes the most unbelievably childish letters to his wife, productions which viewed in the light of the fact that he is actually an exceedingly intelligent man, has a mastery of several languages, and was at one time manager of a large Swiss hotel, must certainly denote a profound, though perhaps selective state of regression.

The question which forces itself on one's mind in this connection is whether in the compulsive-neurotic type of individual a preliminary transitory state of regression similar to the schizophrenic's but perhaps accompanied, because of the nature of the individual, by a good deal more anxiety, is a necessary precondition for recovery One recalls in this connection Freud's often reiterated contention that a psychoanalytic therapy can only be carried out successfully in a state of denial and privation In comparison with the depth and significance of the privation due to the sudden drainage of the organism of its sugar content through the introduction of large doses of insulin, the privations incident to a psychoanalysis certainly seem insignificant Perhaps a greater clarification of the issues involved in this therapy might result if one were to shift one's position from a concentration upon detail to one which gives a broader, bird's-eye view of the problem under consideration

An individual suffering from a paranoid psychosis, supported by delusions and hallucinations, and by a defensive suspiciousness, is placed in a state of sudden deprivation of his sugar In consequence of this, he goes into a profound coma with the abolition of normal defensive reflexes, the emergence of pathological reflexes, profound sweating, disturbances of the circulatory and respiratory functions, and after the neutralization of the hypoglycemia which is responsible for all these manifestations, he awakens with a more or less complete amnesia Or, in addition to the above, he manifests various expressive muscular activities reminiscent at times of the behavior of the decerebrated animal, at other times reaching a degree of chaotic disorganization in the form of an epileptic seizure and frequently possessing a distinct emotional coloring These

phenomena likewise succumb to a more or less complete amnesia. When subjected to a repetition of this artificially induced state a number of times, over eighty-five out of every one hundred paranoid patients who had been ill less than six months recover their normal health What has happened to produce this result?

In the first place, what effect, if any, has the repeated state of profound coma? Does it perhaps help to re-establish repressions which have broken down in the course of the development of the psychosis, inducing in the patient a struggle with ego-dystonic impulses which he can no longer master? However, if this were all, this therapy would be no different from the various forms of narcotic therapy, which likewise induce a state of unconsciousness To be sure, there are significant differences between the two types of coma The insulin coma is undoubtedly more profound and is definitely limited to a short time daily, followed by a rapid transition to complete consciousness, which, of course, is not the case in the various narcotic therapies

In the second place, what bearing, if any, have the various motor and emotional phenomena observed during the hypoglycemic state, phenomena which are, at times, at any rate, strongly reminiscent of an acting-out, a living-out, a catharsis in the psychoanalytic sense? Does the combination of coma as a possible aid to repression and of the catharsis as a living-out of repressed and rejected impulses, perhaps give us a clue here? It would seem that repeated exposure to such a combined state of repression and acting-out might well serve to clear the atmosphere so to speak, of the neurotic and psychotic state, especially, in view of the fact that these experiences of acting-out are followed by an amnesia and thus escape ego and super-ego critique with its consequent guilt and shame and depression Quite in line with this argument would be the observation that some of the recovered patients are distinctly shy of any attempt at a catamenistic reconstruction of their psychosis and their therapeutic experience, as though they intuitively recognized the virtue of letting the past be buried This is in marked contrast to other ex-patients who quite willingly go into detail about

MALIGNANT NEOPLASMS OF THE COLON

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The most common organic lesion of the lower gastrointestinal tract is cancer, which ranks fourth in frequency in the entire list of malignancies, and occurs in approximately the same percentage as cancer of the stomach. About sixty-four per cent of a large series of cases which Graham and I³ studied some years ago were located in the rectum and rectosigmoid, while thirty-six per cent were found in the colon proper.

In few fields of surgery has such marked recent improvement been observed as in surgery for cancer of the colon and rectum, not only in the accomplishment of the extirpative act, but in the preparation before and care after operation. For a long time it has been recognized that advanced cases of hyperparathyroidism, complicated gastric lesions, obstruction in the urinary tract, and other debilitating and dehydrating chronic ailments, were best subjected to a period of preliminary rehabilitation and decompressive measures, but with cancers of the rectum and colon the story has been an entirely different one.

Recognizing that one of the most important fundamental principles of colonic surgery is the satisfactory preoperative decompression of this segment of the gastrointestinal tract the hospitalization of these individuals for a period of five to seven days during which time rehabilitative measures can be instituted, in addition to the decompressive regime, has established an improved type of present-day management. When it is recognized that sixty-eight per cent of all organic lesions of the bowel which require major surgical procedures are due to malignancy and that the average duration of symptoms is close to twelve months, it is equally obvious that an insidious undermining of physiologic equilibrium has taken place whether it is apparent or not, and that all measures which will restore the individual to a status where he is capable of undergoing a formidable surgical program, are desirable.

Another most interesting development

of the last decade has been the recognition of the important etiologic bearing on the histogenesis of cancer of the large bowel and rectum which polyps apparently have, i.e., the adenomatous variety of polyps which are found in such frequent numbers in the same location as carcinomas. Indeed, the coexistence of polyps and carcinomas in resected specimens is most commonplace and while proof is lacking that all of the carcinomas of the lower bowel do originate in polyps, there is small question that the hypothesis that many of them have their origin in such tumors is quite defensible. This thesis was proposed many years ago by Schmeiden, Westhaus, and others, and in recent years Dukes, Mummery, and others have supported it. My own interest in this relationship stimulated me several years ago to report thirteen cases with my colleague, FitzGibbon,² in which we could definitely demonstrate changes from benignancy to malignancy.

In a recent article by Lawrence¹ reviewing 7,000 autopsies performed at the Cook County Hospital, it was demonstrated that not only were polyps thickest in the rectum and sigmoid where carcinomas are most frequently found, but that the incidence of polyps found to be malignant was 3.6 per cent, while an additional incidence of 11.4 per cent of the cancers were found associated with polyps in their immediate vicinity, making a total malignancy incidence of 15.06 per cent. The incidence of polyps in this entire series of postmortem examinations was found to be 3.3 per cent, while in the rectum alone the malignancy incidence was 26.6%.

If further proof of the relationship of cancer and polyps is needed one has only to review the literature of familial adenomatosis, which is a well-known clinical entity in which death from cancer is definitely proved to be around 50%.

Diagnosis

Unfortunately, the early symptoms of organic lesions of the colon and rectum are due to secondary changes and are

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knowledge of the individual, not only as regards his vegetative and neuromuscular peculiarities, but also as regards his personal reactions is necessary. The therapy promises, therefore, to yield its best results in the hands of well-trained psychiatrists.

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CANCER SITUATION "FAR FROM ALARMING"

How the people of the United States are attacking one of the country's major health problems, involving the death of 135,000 Americans annually, was portrayed before a distinguished gathering of foreign savants attending the Second International Congress of Scientific and Social Campaign Against Cancer, which convened in September in Brussels.

Before this distinguished body of scientists representing many countries and races, some facts were presented which at first glance seemed to stamp the cancer situation here as a particularly gloomy one. An American speaker, Dr. Louis I. Dublin, of the Metropolitan Life Insurance Company, and a leading authority on public health problems, declared that at least half a million persons in this country are afflicted with some form of cancer and that, among white residents, out of initial groups of 100 at birth, nine males and twelve females will eventually die from cancer, if present conditions continue. But, in his summary of the entire situation, Dr. Dublin made the optimistic statement that the cancer situation in the United States is far from alarming.

Dr. Dublin limited himself in the main to a discussion of cancer mortality. He based his facts largely upon the mortality experience of the insurance company, explaining that, for the past quarter of a century, the most comprehensive statistics on cancer in this country have been available from the experience of the Metropolitan's Industrial policyholders. He described cancer as a major public health problem, and said that it ranks second in this country in the list of causes of death, while twenty-five years ago it was only in seventh place.

"This change in position," Dr. Dublin explained, however, "is due primarily to a decline in the death rates of the other diseases."

"The death rate from cancer in the last 25 years," Dr. Dublin said, "rose 144 per cent, from 75.8 per 100,000 in 1911, to 86.7 per 100,000 in 1935. It is important, however, to point out that practically all the recorded increase in cancer occurred among males, among females the mortality from cancer declined slightly during this period."

Despite its recorded mortality increases, Dr. Dublin paradoxically questioned whether or not cancer has shown an actual increase as a cause of death. "If one were guided only by the recorded figures for cancer, as a whole," he said, "one would be led to believe that the death rate from this disease has increased during the last twenty-five years. More careful analysis, however, is necessary, and when such analysis is made, it leads to a very different conclusion."

More cancers are recognized now than formerly, due, Dr. Dublin explained, to improved diagnostic technique. Another factor is that, owing to the aging of the population, more and more persons are surviving to the ages where the incidence of cancer is greatest. When these factors are evaluated it becomes apparent that they account for much of the increase which the crude death rate shows.

"Indeed," Dr. Dublin continued, "we may say that the cancer situation in the United States is far from alarming. A number of forms of cancer are already showing declining trends. This is particularly true of those sites which are accessible and, therefore, more readily diagnosed. Throughout the country public and private facilities for the treatment of cases are increasing rapidly. Under the stimulus of the American Medical Association and of the more specialized societies of cancer experts, cancer education and research are being encouraged, and a large body of physicians is being trained to diagnose and treat cases more effectively. There are today about 200 cancer centers throughout the country which measure up to the standards of equipment and trained personnel established by the American College of Surgeons. One hospital in New York alone is now carrying over 12,000 patients on its active file. Other institutions with similar services are springing up in various parts of the country. It is encouraging to find that in the three years 1932 to 1934 the American College of Surgeons registered almost 25,000 living patients without recurring symptoms five or more years after treatment. These efforts will undoubtedly stimulate the movement for better control of cancer throughout the United States."

istic of the growth which has a tendency to encircle the lumen and thus bring about a very slow stenosis

Constipation increasingly severe and unrelieved by enemas or mild purgation is a rule in advanced cases rather than an occasional occurrence. One case out of three of left sided or rectosigmoidal cancer will present itself as a case of acute intestinal obstruction without premonitory symptoms. In the other sixty-six per cent of cases however, there will usually be some type of obstruction during the course of the disease. At times it is chronic and mild, but occasionally it progresses to a point of subacute intestinal obstruction before the individual comes for examination. Generally, the obstruction is not severe enough to demand surgical intervention and is relieved by medical measures, but occasionally the stenosis has advanced to such a point that a decompressive cecostomy or colostomy is necessary and when this does happen, the operation should be undertaken as a blind procedure for decompression only, exploration to discover the size, character, and mobility of the tumor should be deferred until some future time.

The final establishment not only of the pathological type of the organic lesion, but its location, rests in the hands of the expert radiologist. Surgeons and clinicians are fortunate in having had their radiologic colleagues advance so markedly in their technical knowledge of lesions of the large bowel within the past fifteen years.

Given a clean bowel and a cooperative patient, the radiologist can by fluoroscopy be as accurate in the diagnosis of lesions of the colon as in those of the upper gastrointestinal tract. While no physician would think of sending a patient to a radiologist for an examination of the stomach and duodenum after a full meal, it is not an uncommon incident to send an individual in for G. I. series (so called) which includes the examination of the colon, without having emptied the large bowel by purgation or enemas, or both. This results too frequently in the formation of a concrete obstruction above a stenosing colonic cancer and an acute intestinal obstruction superimposed upon a malignant condition. For this reason, if for no other, the diagnosis of organic

lesions by oral administration or opaque medium is a most hazardous procedure in addition to being very inferior to the much more sensible and practical method of administration of barium per rectum.

Operative Stage

Operation on malignant growths not acutely obstructed is enormously advantaged by a period of preliminary preparatory treatment which includes vigorous efforts at decompression along with a regime of rehabilitation. That the routine period should be lengthened to six or seven days has seemed to me to be desirable and during this time attempts at emptying the colon by irrigations and mild purgation usually will be rewarded by a complete decompression.

It is astonishing to see how frequently even subacutely obstructed colons respond to this method and at operation present none of the evidences of obstruction, save some local edema and infiltration. During the period of preliminary preparation fluids are forced to the amount of 4,000 to 5,000 c.c. daily, a diet high in calories and low in residue is insisted upon, and frequently if the patient is debilitated markedly, blood transfusions are given before operation.

In recent years, I have routinely employed blood transfusions postoperatively, but have used them before exploration only in cases which seemed definitely to need them. I am confident that this use of transfusions has aided the convalescence and recovery of many of these patients, although I am unable to explain the exact reason.

After satisfactory preparation, operation on malignant lesions of the large bowel is undertaken usually with the idea that the procedure will be accomplished in multiple stages. It is unquestionably true that many times one may do a single-stage maneuver on the right half of the colon without mortality and with a satisfactory end-result, but in a large series of cases, there is small question that multiple stage procedures will enable one to not only increase the horizon of operability, but to lower the actual hospital death rate.

In operating on the colon, I have not for years indulged in the complete operation of resection with immediate anastomosis,

not sufficiently characteristic in all cases to make the patient seek a careful examination before the disease has extended to a point of ulceration, bleeding, or obstruction, making the diagnosis obvious. Actually, the symptoms which call attention to the presence of a colonic or rectal cancer differ materially according to the location, but in general, it may be said that cancer of the right half of the colon is characterized by disturbances in physiologic equilibrium, while in the left half of the colon obstructive phenomena predominate. In the early stages of a colonic growth, changes in the bowel habit characterized by an increase in the number of stools, or by constipation, or alternating periods of diarrhea and constipation may call attention to its presence.

Constipation is a much discussed symptom of little value in rectal cancer, but is noticeable in a considerable number of cases of colonic cancer. The great difficulty in evaluating constipation and diarrhea is the patient's own attitude toward an increase or a decrease in the number of stools daily because of the very gradual change and the tendency on the part of many people, particularly middle-aged and elderly individuals, to indulge in some form of catharsis more than occasionally.

A change in the bowel habit characterized by irritability, should call for an examination if it persists for a period of a month or more, and if an examination of the stool for bright blood or occult blood, and roentgenographic examination are indulged in, usually the ulceration of the mucosa, which is small, may be demonstrated.

Second only in importance to bowel irritability, is bleeding as a symptom of organic lesions of the lower gastrointestinal tract. Once its presence is demonstrated in the stool or on the stool, no amount of effort should be spared to determine the source, for while red blood in or on the stool most frequently comes from hemorrhoids, it can come from a variety of lesions, the most important of which is cancer of the left colon or rectum.

Adenomatous polyps, diverticulitis, tuberculosis, chronic ulcerative colitis, and other lesions must be ruled out by a careful examination both proctological and roentgenographical. The presence of

occult blood in the stool is of less significance diagnostically. While it may come from cancer of the right colon, it usually indicates a lesion higher in the gastrointestinal tract such as small bowel tumor or peptic ulcer or even peptic ulcer of Meckel's diverticulum.

The very fact that too many patients with cancer of the colon are operated upon under the guise of gall-bladder disease or chronic appendicitis without having had the benefit of an x-ray either of the biliary passages or large bowel, is evidence of an unwarranted carelessness toward lesions of the lower gastrointestinal tract. With the very satisfactory diagnostic evidences of both gall-bladder and colonic lesions available, it seems scarcely possible that ten per cent of cases of right colonic cancer should be explored without an adequate diagnosis, yet such is the case.

The anemia which is so constant a picture in at least one-third of the cancers of the right colon appears without loss of blood although occult blood may be demonstrated in the stool. It may progress to a point where the hemoglobin estimate is as low as twenty-five or thirty per cent and the red cell count as low as two to two and one-half million. Occasionally this picture on first examination is confused with primary anemia, but can easily be differentiated from the latter by a study of the blood picture, or x-ray of the colon.

Attention is called to a third group of tumors which are satisfactory of prognosis and which account for about ten per cent of cancers of the colon, namely, the accidentally discovered tumors in the line of any segment of the large bowel. Palpation of a mass in the region of the cecum, transverse colon, or sigmoid in a thin individual undergoing a routine physical examination, or found by the individual himself or herself, is not an uncommon history in cancer of the colon.

In the left half of the colon the symptoms are entirely obstructive and this is due largely to (1) the character of the bowel itself which is not muscular, less elastic, and smaller in diameter than its fellow of the right half, (2) the fecal current which is formed and hard in contradistinction to the liquid stream of the right side, (3) the pathological character-

tree, particularly in elderly, devitalized individuals who have to be operated upon under local anesthesia, exteriorization is most satisfactory

The mortality following this operation however, is considerably higher than is usually believed, due largely I think, to its application to cases where some other operation should be selected. In 183 cases which I reported some years ago there was a mortality of 9.6 per cent which is a greater hospital casualty list than such an operation should carry.

The other choice of operation for the left colon is a decompression (usually cecostomy), and a subsequent resection. At this second stage one has the opportunity of selecting either an immediate anastomosis or doing an obstructive resection. It has seemed to me quite a satisfactory plan to do an obstructive resection here subsequent to the cecostomy, and it is very little more difficult to close the two colostomies than to close one.

Prognosis

Prognosis, the operability curve, and hospital mortality rate are so closely woven together that influences which reduce the latter and extend the operability rate affect favorably the ultimate outcome. That the prognosis from a statistical study of a large series of cases shows a satisfactory increase in five-year cures following radical surgery, is indisputable.

Of the many factors which influence the outlook following removal of malignancies of the large bowel, the most important in my judgment, is the intrinsic activity of the cancer cell as measured by Broders' classification of malignancy. Table I which represents a study of the outcome in 453 cases of cancer of the colon and 300 cases of cancer of the rectum reported by Olson and myself offers some interesting conclusions.

TABLE I.—GRADING OF MALIGNANCY IN RELATION TO POSTOPERATIVE LENGTH OF LIFE

	Grade 1	Grade 2	Grade 3	Grade 4
RIGHT COLON				
Incidence	16%	53%	21%	10%
Five year cures	68%	60%	48%	37%
LEFT COLON				
Incidence	13%	67%	16%	4%
Five year cures	63%	51%	30%	18%
RELATION OF GRADE TO FIVE YEAR CURES				
Five year cures	66%	56%	39%	28%

Fortunately, as demonstrated in Table I, most cancers of the colon fall into the lower grades (1 and 2) where metastasis is slower, glandular and hepatic involvement correspondingly lower, and in consequence, the result more favorable following successful removal. One also notes that there is a difference in prognosis between the right and the left halves of the colon. Just why this should be is not quite clear, but the right colon does offer a distinctly better prognosis than its fellow of the opposite side, regardless of the grade of the growth under consideration.

Five-year cures of extirpated cancers which show two out of three of Grade 1, better than one out of two of Grade 2, and gradually down to one out of four of Grade 4 survivals, indicate a hopeful prognosis.

Mortality statistics have been greatly reduced over the last two decades by increasing the safety factors mentioned above, in addition to other influences. Table II shows the operability rate and the mortality rate for cancer of the colon and rectum in my service in four recent years.

TABLE II

	Operability	Mortality
1930	57.5%	10.9%
1931	56%	9.1%
1932	55%	11.8%
1935	76%	10%

A mortality rate of ten per cent with a high operability curve should be considered satisfactory. Occasionally one does have a series of cases, either right or left colon resections, in which this rate will be improved. For instance, in my series of obstructive resections of the colon I have done seventy-one resections with six deaths, a mortality of 8.4 per cent. However, in the first series of twenty-three cases I did there was only one death—a mortality of 4.3 per cent. Graham and I reported² sixty-seven cases of aseptic anastomosis and resection for the right colon in which there were four deaths, a mortality of 5.9 per cent.

One is inclined to insist however, that the mortality rate not be reduced at the expense of the operability curve. An operability of less than fifty per cent is too low and in the hands of experienced surgeons it will be found that the average

either lateral or end-to-end except for some occasional definite reason under exceptional circumstances. It must be admitted that such a procedure can be safely done in selected cases, but as a routine method of approach, the graded maneuver has a far wider field of usefulness.

Selection of types of operation for the two halves may be divided usually into the following phases:

Right half, (1) (a) ileocolostomy (aseptic) between the terminal ileum and the middle of the transverse colon, and (b) resection at a subsequent stage, (2) ileocolostomy and resection in one stage plus a complementary ileostomy.

Left half, (1) obstructive resection, (2) (a) decompressive maneuver (cecostomy or colostomy), (b) resection by obstructive type of maneuver or resection and anastomosis, (3) exteriorization procedures (Paul-Bloch), (4) resection and immediate anastomosis with or without a complementary cecostomy.

It has seemed to me that in dealing with right colonic growths, exploration followed by an ileocolostomy of an aseptic type and a subsequent resection of the colon weeks later has been the best method. I hold no particular brief for any of the aseptic types of anastomosis save only that any clean operation is advantageous, but each surgeon should, no doubt, hold to the type of operation to which he has adapted himself. The important point which should be emphasized is that in dealing with right colonic growths the reason for a multiple stage operation is the reduction of the danger of peritonitis which easily attacks and annihilates a dessicated, dehydrated, and anemic individual, and the end-to-side anastomosis does this much more completely than the lateral. If the growth is small and freely movable and there is no evidence of pericolic infection, a one-stage resection and anastomosis may frequently be undertaken safely, but one will feel more comfortable and convalescence will be made smoother by the complementary use of an ileostomy proximal to the anastomosis line.

The principle of exteriorization applied to the right half of the colon has never seemed to me a logical one because here after the removal of the growth the liquid feces of the small bowel are difficult to control, are irritating to the abdominal

wall, and in addition, if the risk is small enough to permit exteriorization, there is small additional danger in going through with the resection and anastomosis.

In dealing with the left colon a more radical dissection of pericolic tissues and removal of mesentery can be accomplished if one does not attempt to do a complete operation in one stage and re-establish the continuity of the gastrointestinal tract.

The obstructive resection which incorporates all the satisfactory factors of an exteriorization procedure without the added danger of a primary anastomosis, is my own choice of operation provided only that the bowel obstruction has been relieved preliminary to exploration. In the last three years I have found it of distinct advantage to almost routinely supplement this obstructive resection by a cecostomy. The Witzel type of cecostomy with a Pezzar catheter keeps the bowel decompressed and makes the entire operative procedure not only a simpler one, but makes the convalescence a much more comfortable phase.

Exteriorization procedures have a very distinct field of usefulness in dealing with growths in the transverse colon and the left half. The principle of exteriorization was first introduced by Bloch, of Copenhagen, in 1892 and subsequently in the same year was modified by Paul, who did an immediate resection with decompression of the proximal colon by the introduction of a tube into the proximal loop of bowel. Mikulicz's report of a large series of these cases years later resulted in his name becoming attached to the procedure.

That there are disadvantages to an exteriorization procedure without resection and decompression is obvious for several reasons. (1) it cannot be applied to growths which occur in segments of the bowel having a short mesentery, (2) it should not be employed in large, inflammatory growths, (3) it is impractical in obese individuals, (4) any growth in which one must ligate the blood supply in order to bring the tumor out is liable to result in a gangrenous loop of bowel from which peritonitis may develop. In a segment of bowel which has a long mesentery and in which the growth may be brought out without interference to the vascular

STREPTOTHRIX AND MONILIA INFECTIONS AS CLINICAL ENTITIES

REUBEN HAYES IRISH, M D , *Troy*

In my earlier practice, I not infrequently came across these branching and budding organisms in smears from sputums examined for tubercle bacilli, as they took the carbol-fuchsin stain readily and showed considerable resistance to decolorization by the acid method

I knew they were not tubercle bacilli, and as I, like many others at that time, considered them contaminating organisms and not pathogenic, I attached little or no significance to them

Credit for the first clear description of monilia infections in the lungs and bronchi belongs probably to Castellani,¹ and the articles of Musgrave, Clegg, and Polk² published in 1908 contained an extensive bibliography on "Pulmonary Streptothricosis" Since that time the published cases and the literature on these subjects from all parts of the world have become voluminous

The only reason for reporting the cases that have come under my care or observation in the past two or three years is that the infections are still not generally recognized as definite clinical and pathological conditions with a remedy which is practically a specific if used early, before definite pathological changes have taken place in the tissues Lord³ gave an unfavorable prognosis in streptothrix infection, "because all cases of pulmonary infection in which the presence of streptothrix was satisfactorily established have died." Under "Treatment" he also stated that there is "no specific treatment" However, since that time several articles have appeared in medical journals, the prognosis is much better than it then seemed, and there is a definite drug which, if not an absolute specific, is at least of great value in the treatment of these infections

The organisms in question are thread-like, budding or branching They grow slowly in culture media, yet more readily than tubercle bacilli, take carbol-fuchsin stain readily, and usually resist decolori-

zation by weak acids and alcohol Care must be taken not to mistake them for branching tubercle bacilli from which they may be distinguished by their longer thread-like form, tendency to appear in loose clusters of numerous interlacing filaments, less resistance to acids, greater readiness with which they may be cultivated, and results of animal experimentation in special cases For it must always be borne in mind that they are frequently contaminating organisms in other infections, apparently without special pathological significance

With this introduction, I shall present the histories of the nine cases that have recently come under my personal supervision I consider these streptothrix and Monilia infections together because they have many points of similarity, such as staining and cultural peculiarities, special tendency to involvement of the respiratory tract, and general blood infection, and the same remedy seems to be of value in both infections

CASE 1 R M, male, age eleven, readmitted July 9, 1932 This patient was given a 1-500 Mantoux intradermal tuberculin test in school and gave a well-marked tuberculin reaction, after which he was sent to the tuberculosis clinic, where he came under my observation He was slightly underweight, anemic, and had enlarged cryptic tonsils and adenoids He showed changes in the tracheo-bronchial glands which, together with a tuberculin reaction, we designate as "childhood tuberculosis" I advised the removal of his tonsils and adenoids, which was done on July 1, 1932, and he was discharged from the hospital the following day apparently in good condition The next day he went to bed complaining of pain in the stomach and headache, and for two or three days had irregular attacks of hyperpyrexia, especially in the afternoon Three days later he complained of pain in the left groin and was readmitted to the hospital There was still congestion where the tonsils had been removed, and there was a yellowish membrane over both tonsillar fossae

The boy seemed very ill, so I had cultures taken from the throat as well as a blood culture. In the meantime, while waiting for

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Read before the Albany Pathological Society April 18, 1935

operability rate will be from sixty to sixty-five per cent. Certainly, with this figure in mind and a mortality between seven and ten per cent, the five-year cures in such a high percentage of cases is not an unexpected result.

With increasing facilities for accurate diagnosis and improved technical maneuvers which are now further supplemented by adequate preliminary preparatory measures and meticulous postoperative care, the main offensive against colonic

cancer must continue for the immediate future to be in the direction of early diagnosis before complications have supervened

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THE DOCTOR AND SCHOOL ATHLETICS

It is a fine thing of course for the thousands of students in our schools to have their gyms, athletic fields, and teams of all kinds, but a Kansas medical writer remarks that if the situation be analyzed just a little more closely, one cannot fail to realize that there is more to the physical education of these students than the physical equipment, which may be purchased by the boards of education, and the physical directors. One must consider the physical development of the individual student, with regard to skeletal and muscular growth, adolescent development, and nervous and physical reserve. This analysis can only be made by someone trained in the fields of human physiology and pathology. In some of the larger institutions and school systems, this has been accomplished through the employment of part or full time school physicians.

In the smaller systems, the budget will not permit such an expenditure, therefore, the coach or physical director must rely upon that service which he is able to obtain "free gratis." Too frequently this service has been procured from individuals or cultists, desirous of making public contacts, but not capable of rendering the service required.

A few years ago, the physical director of one of the larger schools instituted routine physical examinations for all men coming under his supervision. He procured the services of two of the younger practitioners of

his community to conduct the examinations. In the course of these examinations much interesting information was obtained. There was one instance of amoebic dysentery, several hernias, occasional tachycardias or arrhythmias, etc. These students were not permitted to enter active physical training until these defects were corrected. That physical director has given his charges an immeasurable service, but that service could never have been rendered had it not been for two interested and willing M.D.'s, giving their time and service for no other remuneration than the personal and public contacts that they were able to make.

Medical men over the state should take into consideration the athletes of the forthcoming year. If possible, coaches and physical directors should be contacted, and the services of physicians should be offered to conduct physical examinations, particularly upon students entering athletic competition. Coaches should be advised that all injuries, intervening infections, and ailments should be checked to a physician, family or otherwise before active competition or further practice is permitted. Physicians should take it upon themselves to see that no athlete enters active competition, suffering from an ailment either chronic or acute, which might impair that individual's chances to carry on after school days are over.

MEDICAL RADIO BROADCASTS

The Medical Information Bureau of the New York Academy of Medicine announces the following broadcasts from Station WABC and the Columbia Broadcasting System network.

Thursday, Oct. 15, 1:30 P.M.—Speaker Dr. George Draper, Associate Professor of Clinical Medicine at Columbia University. Subject: "Relation of Human Constitution to Disease."

Thursday, Oct. 22, 1:30 P.M.—Speaker Dr. Henry S. Patterson, Medical Director at St. Luke's Hospital. Subject: "Exercise for the Middle Aged and Elderly."

Thursday, Oct. 29, 1:30 P.M.—Speaker Dr. Richard Kovacs, Clinical Professor of Physical Therapy at Polytechnic Medical School and Hospital. Subject: "Physical Treatment of Arthritis."

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The only reason for reporting the cases that have come under my care or observation in the past two or three years is that the infections are still not generally recognized as definite clinical and pathological conditions with a remedy which is practically a specific if used early, before definite pathological changes have taken place in the tissues. Lord³ gave an unfavorable prognosis in streptothrix infection, "because all cases of pulmonary infection in which the presence of streptothrix was satisfactorily established have died." Under "Treatment" he also stated that there is "no specific treatment." However, since that time several articles have appeared in medical journals, the prognosis is much better than it then seemed, and there is a definite drug which, if not an absolute specific, is at least of great value in the treatment of these infections

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CASE 1 R. M., male, age eleven, readmitted July 9, 1932. This patient was given a 1-500 Mantoux intradermal tuberculin test in school and gave a well-marked tuberculin reaction, after which he was sent to the tuberculosis clinic, where he came under my observation. He was slightly underweight, anemic, and had enlarged cryptic tonsils and adenoids. He showed changes in the tracheo-bronchial glands which, together with a tuberculin reaction, we designate as "childhood tuberculosis." I advised the removal of his tonsils and adenoids, which was done on July 1, 1932, and he was discharged from the hospital the following day apparently in good condition. The next day he went to bed complaining of pain in the stomach and headache, and for two or three days had irregular attacks of hyperpyrexia, especially in the afternoon. Three days later he complained of pain in the left groin and was readmitted to the hospital. There was still congestion where the tonsils had been removed, and there was a yellowish membrane over both tonsillar fossae.

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a growth to develop in the media, feeling that he had a general septic infection, I used mercurochrome intravenously, ten cc 05 per cent, daily for two or three days until I heard from the blood culture. The smears from the throat showed a streptothrix. A few days later the laboratory technician said she had found almost pure cultures of streptothrix in the blood, as well as mixed cultures with the streptothrix in the sputum. At that time I had had no previous personal experience with the streptothrix as a *pathological* organism. I asked what drug she had read of being used in its treatment, and she mentioned potassium iodide. I told her that I believed sodium iodide would also serve, and this being a desperate case, I decided to use it intravenously.

In the meantime, the patient had been running a typical pyemic temperature with sudden rises and sudden falls. The muscles in his left thigh became more rigid, the induration in the groin became more marked, pus formed, and the abscess opened and drained. I continued the iodide every day for two or three days, then every second day, and later syrup of hydroiodic acid by mouth.

A few days later he began to complain of a pain in the right side of his chest, cough, and expectoration, and streptothrix were found in his sputum. Later the physical signs and an x-ray indicated fluid in the pleura, and upon aspiration this was found to be pus containing the same streptothrix in almost pure culture. A surgeon was called in, who resected a portion of one of the ribs and drained the pleural cavity. The discharge was very profuse from the incision in the chest, and the wounds became infected causing a large sloughing wound which resulted in an open sinus into the pleura one to one and one-half inch in diameter, through which one could look with a flashlight and view the whole pleural cavity.

His general symptoms continued much the same for some time with irregular temperature and rapid pulse, anemia, and very marked loss of weight, until he was literally "skin and bones." He had an abscess involving the right hip joint and another at the lower end of the spine. The x-ray showed necrotic changes in bones of both hips on the lower sacrum and coccyx, and numerous sloughing areas in the skin wherever there was pressure. The pus from all of these abscesses and sloughs showed the streptothrix on laboratory examination.

The acute symptoms gradually subsided and the patient eventually recovered, but with considerable deformity, for which he was treated later at the Shriners' Orthopedic Hospital at Pittsfield, Mass. The pathogenesis of the streptothrix in this case was

never definitely established, but the clinical and laboratory evidence was so overwhelming that it left little doubt in my mind as to the nature of the infection. There seems to have been doubt, however, from a pathological standpoint, as to the classification of the organism in this particular case. I am sure it was reported on the chart at that time as a streptothrix, but proof is lacking, for the chart disappeared. I have been told that it was finally established that it belonged to the *Monilia* or mold-fungus group. I shall not attempt to discuss this question, for in this paper, dealing chiefly with the clinical aspects, diagnosis and treatment of these infections, it is not essential to settle it. The clinical picture, however, fits in better with the streptothrix infections as described in the literature.

CASE 2 W J F, age nineteen, single, was admitted to hospital Feb 17, 1933. This was a splendidly developed well-nourished young man who entered hospital in a semicomatose condition. He had been suddenly seized with severe frontal or temporal headache two or three days previously, and then it was noted that his neck became rigid and his head drawn backward. There followed extreme weakness, anorexia, gradually developing coma.

He was found in the position of extreme opisthotonos. Eye reflexes were normal, pupils equal. There was spasm of the epiglottis, irregular respiration and heart beat, muscular twitching in the right arm. Kernig's sign was present in both legs, tache cerebrale was elicited. The pharynx was red and injected. Temperature on admission was 99.2, rising a few hours later to 101.4 and varied from 101 to 103.2 for five or six days. Except for a slight amount of albumen, the urine was negative.

There was a leukocyte of 17,600 on admission, increasing in a few days to 20,000. A specimen of blood, which was sent to the New York State Laboratory, hemolized so that Wassermann and complement fixation test for tuberculosis could not be made.

Spinal fluid on admission was opaque with bright red blood. It separated on standing to a bloody sediment and a clear fluid. It was unsatisfactory for cell counts and chemical tests but Wassermann was negative. Smears (Gram stain) showed a few pus cells and fungoid growth morphologically *streptothricosis*.

Blood plates yielded a fungoid growth of the same variety as the spinal fluid. Tubercle bacilli were not found, but a few Gram positive cocci in chains and many Gram negative cocci were found.

Throat cultures yielded a staphylococcus aureus, a streptococcus, and yeast cells.

One week after admission there developed slight dullness at the base of the right lung posterior with fairly numerous small and medium moist rales, and slight pleuritic friction sound. There was cough and expectoration of a brick dust sputum, cultures of which yielded a streptothrix. X-ray showed bilateral parenchymatous thickening and marked density of the hili with no definite consolidation.

Because of waiting for growth of cultures, we were late in making the final diagnosis. Sodium iodide 15 grains was used intravenously as well as glucose. Though spinal symptoms had improved, the temperature rose after evidence of pulmonary involvement, to 106° and the patient died nine days after admission.

In this case streptothrix was found in cultures from spinal fluid, blood and sputum. The evidence convinced me that there was a general streptothrix infection with streptothrix meningitis and pulmonary involvement due to the same organism.

CASE 3 M J W, age thirty-seven. This patient had been diagnosed and treated as tuberculous. For several years he had been a patient at Gabriels' Sanatorium two or three times for short periods. When he came under my care, he was very erratic in behavior and had been a sexual neurotic since childhood. He had cough dyspnea, profuse expectoration, was always definitely overweight, and had no elevation of temperature or pulse rate at any time while under my observation. His sputum was repeatedly examined and never showed tubercle bacilli, nor could I get a history of their having ever been found in his sputum. His physical signs showed a very marked consolidation with moisture in the upper lobe of the right lung.

The things that made me suspicious that we were dealing with something other than tuberculosis were the absence of tubercle bacilli in the sputum, the fact that he never had an elevation of temperature or pulse rate, and that he remained overweight. I advised a stay of a few days in the hospital for observation. He was admitted under my care February 28, 1933. He had a discharging left ear of many years standing, and a chronic urethral discharge dating back to an old gonorrheal infection. He remained in the hospital only long enough to have specimens of sputum, ear discharge and pus from the ear and urethra obtained by massage, submitted for laboratory examination, and an x-ray of the chest taken.

A specimen of blood previously examined at the New York State Laboratory gave a negative Wassermann reaction and there was no fixation of the complement with the

antigen used in the complement fixation test for tuberculosis.

The smears and cultures from the sputum and the ear discharge showed a streptothrix and the discharge from the prostate and seminal vesicles showed a mixed infection with the staphylococcus predominating.

The x-ray report showed marked peribronchial thickening of both bronchial trees, marked parenchymal thickening of upper right lobes, and to lesser degree, of the upper left, some fleeciness of the remainder of both lungs.

Of course we could not expect to remove the changes he already had, but with the idea of stopping the process where it was, I suggested the use of sodium iodide intravenously every second day, followed by some form of iodide by mouth. After the second dose he refused intravenous treatments, and I gave him syrup of hydroiodic acid by mouth.

I understand from the family that he is in very good condition at present, is doing some work, and attending social functions connected with the church.

The case is chiefly interesting from the standpoint of diagnosis from chronic fibroid tuberculosis.

After this detailed history of two very acute cases and one chronic case of streptothrix infection of the fungus group of organisms, I shall pass to a description of Monilia infections of the yeast-like organisms.

Although I am not a pathologist, I assume, from the reports that I have received on laboratory specimens examined that the Monilia organism is not an easy one to identify, for the reports are always couched in language something like this: "A yeast-like micro-organism resembling monilia was isolated"—or this—"A yeast-like micro-organism which proved to be monilia pathogenic for a white rat was isolated."

CASE 4 W S, widow, age sixty-five living with an older sister in two rooms. Her general condition had been poor for some time, chiefly due to worry over shortage of funds and lack of regular employment. Admitted to the hospital April 5, 1934. She had not felt well for about ten days previous to that time and I had been called about three or four days before sending her to the hospital. At first she seemed to be suffering from an infection in the nose and throat. She had chilly feelings and there was definite congestion of the mucous membranes of the nose and throat with a white secretion in the follicles of the tonsils, and

a slight cough which seemed to be due to a laryngitis

On the day I sent her to the hospital, she had a severe cough with expectoration, temperature of about 101, pulse of 130, and respirations of 30. I made a clinical diagnosis at that time of bronchopneumonia and used a mixed stock vaccine in one c.c. doses every twelve to twenty-four hours, and left an order for examination of the sputum for pneumococci which were to be typed at once if present or the predominating organism reported. Due to an unexplained delay in the examination I did not get a report on the sputum until April 9. It was as follows

Sputum Reddish offensive, tenacious, opaque, mucopurulent. Pus cells and lymphocytes present. *Smears* (Gram stain) The predominating organism is one of the yeast group occurring in long rods with buds containing acid fast granules. Many of these buds have broken off and appear as individual organisms. Associated are organisms of many varieties including Gram positive cocci in pairs and small groups, a few in chain formation and a Gram negative bacillus in smaller numbers. This is a primary yeast infection and belongs in the group *Monilia*s

A subsequent examination of the sputum made at my request at the New York State Laboratory a few days later, after the patient's death, gave the following results

Cultural examination No tubercle bacilli were found. *Pneumococcus* type one was isolated. A yeast-like micro-organism resembling *Monilia* was isolated. Further tests are being made to determine its pathogenicity

It was this report in which I was especially interested, for there was some doubt in my mind that this organism was the particular pathogenic agent in this case. A few days later the State Laboratory reported that the yeast-like micro-organism isolated from the specimen of sputum, concerning which a previous report was sent, proved to be pathogenic for a white rat

The blood cultures which had been preserved in the hospital laboratory also showed a *Monilia* pathogenic for a white rat, when examined in the New York State Laboratory

When the report of the predominating organism came to me it was too late to do anything effective, although I did give her one intravenous injection of sodium iodide on April 10, five days after her admission to the hospital, and one day before she died, which was about two weeks after the first evidence of infection in her nose and throat.

CASE 5 E B, single, age seventy-four, sister of Case 4. I had treated this patient for arteriosclerosis and hypertension at in-

tervals for several years. Three or four days before her sister died, I was called to see her in a private home where she was a guest. She presented all the symptoms of an acute gastroenteritis with nausea, vomiting, a very profuse diarrhea, severe griping pains, and extreme prostration. Her temperature was about 101 and pulse about 120. I suspected the nature of the infection and two days later she was admitted to the hospital under my care. This was April 10, the day before her sister died

On admission, the gastrointestinal symptoms had somewhat improved, the pharynx and uvula were congested and there were white spots dotted over the soft palate. She had developed a cough and expectoration, and showed moderate dullness and a few fine moist rales at the posterior base of the right lung. Her sputum was the typical brick dust sputum of pneumonia, and she was in a condition of extreme prostration and stupor which gradually developed into a condition of semi-coma from which she was aroused with difficulty for food and medicine. Her arteries were thickened and blood pressure was 170/80. There was a pleuritic friction at the base of the right lung

The urine showed three plus albumen on admission and a few days later only a trace. The hemoglobin was sixty-seven per cent, red cells 3,250,000, color index 1, leukocytes 13,699, neutrophils ninety-four per cent, lymphocytes large and small three per cent, large monos one per cent, transitionals two per cent. The red cells showed marked acromia, marked anisocytosis, and moderate poikilocytosis

The laboratory reported that the sputum smears showed the predominating organism to be one of the yeast group occurring in different forms, some of them containing acid fast granules. Associated were many acid-fast Gram positive cocci scattered throughout in groups and in chains. It was the impression in the laboratory that these findings indicated primarily a yeast infection belonging in the group "*Monilia*s". Smears from the throat under Gram stain showed "a few pus cells a few Gram positive cocci scattered throughout, culture yields *staphylococcus aureus* and *streptococcus*"

On the strength of this report and because of the sister's case, I began using intravenous injections of sodium iodide fifteen grains daily. In spite of subpectoral injections of saline solution, heart stimulation, and intravenous sodium iodide, this patient seemed to be steadily losing ground.

At that time certain obvious questions formed in my mind regarding these infec-

tions, to which I could give no satisfactory answer, but after intensive reading on the subject, and an investigation of the cases made by the New York State Laboratory at my request, I believed I could answer some, at least, of these questions. The New York State Laboratory was very much interested in the subject, and sent someone to the hospital to investigate. Specimens were carefully examined in the State Laboratory. Complete reports of their findings were sent back for hospital records, and copies were sent to me.

Previous to that time the pathogenesis of these organisms had never been proven in that particular hospital. Not that these infections had not already been proven in the literature to have been pathogenic in reported cases, but since I had a larger number of cases in the course of two years than would ordinarily come under the care of one man, I wanted to prove certain things for my own satisfaction in this group of cases, and to add our observations to those already recorded.

Blood cultures taken soon after admission to the hospital showed no growth after six days incubation. When the laboratory representative arrived, this patient was practically in a condition of coma from which she could be aroused only with great difficulty. Her temperature was running from about 99 to 103.4 at the highest, pulse 100 to 138 at the highest, and respirations from thirty to fifty. I had used subpectoral saline infusions, intravenous glucose solutions, digitalis and caffeine, and continued the sodium iodide solution in daily doses of fifteen grains intravenously.

After a sufficient time for the cultures to grow out and for experimentation on animals with the cultures, we received reports in about the following order. Cultures were obtained from the hospital laboratory in the case of this patient's sister who had died a few days previously, these results I have already reported. The findings received from the New York State Laboratory were as follows:

Sputum. No tubercle bacilli were found with the Ziehl-Neelsen stain. **Cultural examination.** A yeast-like micro-organism, which proved to be a monilia pathogenic for a white rat, was isolated. A mouse, inoculated with some of the sputum, showed many lesions due to staphylococcus when autopsied. Six days later blood cultures taken at that time showed Monilia. **Stools.** Soft mass, greenish large shreds of mucous. **Smears (Gram stain).** Predominating organism is a fungus (morphological monilia). **Blood culture.** Yields Monilia. Many Monilia were isolated from the specimen of feces received on April 16. These micro-organisms proved to be pathogenic for a white rat.

This patient slowly and steadily improved. The sodium iodide was discontinued in the veins after a few days and syrup of hydroiodic acid was substituted by mouth in teaspoonful doses. She never showed symptoms of iodism during her treatment and left the hospital, none the worse for her experience, about six weeks from the date of admission, despite her advanced age of seventy-four and her general condition poor on admission.

It must be added that we did not meet with great success in trying to ferret out the source of the infection in these cases. This last case, starting as a gastroenteritis, was suggestive of a food or drink infection, although its onset some time after the sister's first symptoms suggested also a contact infection through eating and drinking utensils or air inhalation.

CASE 6 S S, age twenty-nine, housewife. This patient's mother had died of tuberculosis, and an uncle who lives with her had had a severe cough for some months. She herself had had no serious previous illness and her menstruation was regular and painless.

Her present illness began about five weeks previous to examination with what she called a very bad cold starting on the first day of her menstruation. Since onset she had very severe spasmodic cough with blood-streaked sputum at times. She had no chill or night sweats, no loss of weight, no dyspnea, and appetite was good.

She was found to be slightly above average weight, with a P.M. temperature of ninety-nine and pulse of seventy-six. There was a slight congestion in the region of the ethmoids and the dental hygiene was poor with four or five teeth carious.

Examination of the lungs showed *Right lung*. Slight dullness to second rib with fairly numerous fine moist rales on cough and on breathing. *Left lung*. Slight dullness and a few fine rales on coughing and breathing above and below the left clavicle.

X-ray showed on the right a fine dotted appearance throughout the whole lung including the apex and a thickened hilus. On the left, the hilus was thickened and there was increased density in the apex. In the first, second, and third interspaces there was the same dotted appearance seen on the right. In addition, in the inner half of the second interspace was a large opaque node, irregular in outline.

The sputum examination revealed no tubercle bacilli, but a yeast-like organism was found. Cultures of the sputum showed this organism to resemble Monilia, and, two weeks later it was reported that this organism "proved to be pathogenic for white rats."

a slight cough which seemed to be due to a laryngitis

On the day I sent her to the hospital, she had a severe cough with expectoration, temperature of about 101, pulse of 130, and respirations of 30. I made a clinical diagnosis at that time of bronchopneumonia and used a mixed stock vaccine in one c.c. doses every twelve to twenty-four hours, and left an order for examination of the sputum for pneumococci which were to be typed at once if present or the predominating organism reported. Due to an unexplained delay in the examination I did not get a report on the sputum until April 9. It was as follows

Sputum Reddish offensive, tenacious, opaque, mucopurulent. Pus cells and lymphocytes present. *Smears* (Gram stain) The predominating organism is one of the yeast group occurring in long rods with buds containing acid fast granules. Many of these buds have broken off and appear as individual organisms. Associated are organisms of many varieties including Gram positive cocci in pairs and small groups, a few in chain formation and a Gram negative bacillus in smaller numbers. This is a primary yeast infection and belongs in the group *Monilia*.

A subsequent examination of the sputum made at my request at the New York State Laboratory a few days later, after the patient's death, gave the following results

Cultural examination No tubercle bacilli were found. *Pneumococcus* type one was isolated. A yeast-like micro-organism resembling *Monilia* was isolated. Further tests are being made to determine its pathogenicity.

It was this report in which I was especially interested, for there was some doubt in my mind that this organism was the particular pathogenic agent in this case. A few days later the State Laboratory reported that the yeast-like micro-organism isolated from the specimen of sputum, concerning which a previous report was sent, proved to be pathogenic for a white rat.

The blood cultures which had been preserved in the hospital laboratory also showed a *Monilia* pathogenic for a white rat, when examined in the New York State Laboratory.

When the report of the predominating organism came to me it was too late to do anything effective, although I did give her one intravenous injection of sodium iodide on April 10, five days after her admission to the hospital, and one day before she died, which was about two weeks after the first evidence of infection in her nose and throat.

CASE 5. E. B., single, age seventy-four, sister of Case 4. I had treated this patient for arteriosclerosis and hypertension at in-

tervals for several years. Three or four days before her sister died, I was called to see her in a private home where she was a guest. She presented all the symptoms of an acute gastroenteritis with nausea, vomiting, a very profuse diarrhea, severe griping pains, and extreme prostration. Her temperature was about 101 and pulse about 120. I suspected the nature of the infection and two days later she was admitted to the hospital under my care. This was April 10, the day before her sister died.

On admission, the gastrointestinal symptoms had somewhat improved, the pharynx and uvula were congested and there were white spots dotted over the soft palate. She had developed a cough and expectoration, and showed moderate dullness and a few fine moist rales at the posterior base of the right lung. Her sputum was the typical brick dust sputum of pneumonia, and she was in a condition of extreme prostration and stupor which gradually developed into a condition of semi-coma from which she was aroused with difficulty for food and medicine. Her arteries were thickened and blood pressure was 170/80. There was a pleuritic friction at the base of the right lung.

The urine showed three plus albumen on admission and a few days later only a trace. The hemoglobin was sixty-seven per cent, red cells 3,250,000, color index 1, leukocytes 13,699, neutrophils ninety-four per cent, lymphocytes large and small three per cent, large monos one per cent, transitionals two per cent. The red cells showed marked acromia, marked anisocytosis, and moderate poikilocytosis.

The laboratory reported that the sputum smears showed the predominating organism to be one of the yeast group occurring in different forms, some of them containing acid fast granules. Associated were many acid-fast Gram positive cocci scattered throughout in groups and in chains. It was the impression in the laboratory that these findings indicated primarily a yeast infection belonging in the group "*Monilia*." Smears from the throat under Gram stain showed "a few pus cells, a few Gram positive cocci scattered throughout, culture yields *staphylococcus aureus* and *streptococcus*."

On the strength of this report and because of the sister's case, I began using intravenous injections of sodium iodide fifteen grains daily. In spite of subpectoral injections of saline solution, heart stimulation, and intravenous sodium iodide, this patient seemed to be steadily losing ground.

At that time certain obvious questions formed in my mind regarding these infec-

perimentation, therefore in acute pulmonary infections our chief reliance in diagnosis must be upon finding these organisms predominating in the smears from the sputum

In subacute or chronic infections, diagnosis should be based upon cultural findings and animal experimentation

In this connection the experiments of Bast, Hazard, and Foley⁴ of Boston, published with histories of three cases and an extensive bibliography, are worthy of note. They prepared an antigen for intradermal test in diagnosis, and prepared and used a vaccine in the treatment of pulmonary Moniliasis. This is a very interesting experiment and may be of definite service in both diagnosis and treatment

These infections may involve not only bronchi, lungs and pleura, but also joints, the gastrointestinal tract, meninges of the spinal canal, or the general blood stream. They show a marked preference for the respiratory tract, every case which I have reported showing some involvement there. There is also a marked tendency to general septic or blood stream infection, over forty per cent of the cases reported above giving a positive blood culture. These cases have convinced us that the primary infection in the large majority of cases takes place through the respiratory tract and is acquired by inhalation, although primary infection may take place in operative or other wounds, or through the gastrointestinal tract

Streptothrix infections seem to show a greater tendency to pus and abscess formation than the Monilia infection

I think there is no doubt that iodide in some form is almost, if not quite, a specific drug in the treatment of these infections. Sodium iodide, by preference, should be given intravenously in the very acute cases, or where there is general septic infection, and sodium or potassium iodide or syrup of hydriodic acid by mouth in subacute or chronic infections. Whenever possible the patient should first be tested for susceptibility to the iodide treatment

In general, I believe that the procedure in treatment of these cases is to make a probable diagnosis, based upon the predominating organism in the smears, and to start treatment, if necessary, before the diagnosis is confirmed by cultures and animal experimentation. There is certainly nothing to be lost and much to be gained by this method

In conclusion, I believe that where these organisms are definitely found as the predominating organisms in smears and cultures, they should be given the same consideration as one would give the streptococcus pneumococcus or "Vincent's" organisms under like conditions

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DOUBTFUL CLINICAL LABORATORIES

Physicians who patronize unapproved clinical laboratories do a good turn neither to themselves nor their patients, observes the *New York Medical Week*. While some of the laboratories that have not sought recognition may be irreproachable in standards and practices, for the most part failure to obtain certification indicates an inability or unwillingness to meet the prescribed requirements

Aside from the question of technical performance, there are other important points at issue. Clinical pathology is an essential specialty of medicine and should be practiced only by qualified physicians, aided when necessary by competent technicians working under medical supervision. The ethical principles governing this specialty diverge at no point from those governing the rest of healing. There is no more justifica-

tion for improper advertising and secret rebates by clinical laboratories than by practitioners in any other branch of medicine

Appropriate standards for the laboratory sciences have been fixed by the A. M. A. and the American Association of Clinical Pathologists as well as the Medical Society of the County of New York. None of these organizations has the power to enforce its requirements save by voluntary co-operation, so that the maintenance of proper conditions is entirely dependent on the individual practitioner. Support of certified laboratories helps to keep control of an essential medical specialty in the hands of the profession. Patronage of unapproved laboratories undermines the authority of organized medicine and weakens the ethical safeguards against low scientific standards and unfair competitive practices

My diagnosis had been pulmonary Moniliasis. Treatment had been advised of sodium iodide from one to fifteen grains t.i.d. and glycerophosphates. The attending physician later reported that this patient's recovery was rapid, uneventful, and apparently complete.

CASE 7 Italian, age fifty-seven, baker coming in constant contact with flour dust. This patient was sent to me for diagnosis in an endeavor to secure a pension from the government. Apparently it was thought that he had developed tuberculosis while in service as a baker in the army for twenty-three months.

His chief complaints were hoarseness, huskiness of voice, and dyspnea on exertion. He was definitely overweight and had no elevation of temperature or increase in pulse rate. He had well-marked chronic catarrhal pharyngitis and laryngitis. The bases of his lungs posteriorly showed a moderate number of medium moist rales on breathing and cough. There was tenderness over this area. X-ray revealed marked peribronchial thickening in both lungs, radiating in all directions from the hilus ending in a moderately coarse mottling in the lower half of both lungs.

The complement fixation test for tuberculosis on the blood was negative. There was no Wassermann test. Tubercle bacilli were not found in the sputum, but the predominating organism was a yeast-like micro-organism resembling *Monilia*.

The diagnosis was pneumoconiosis, chronic pharyngitis, and laryngitis due to inhalation of flour dust in his trade as a baker, possible yeast infection of the *Monilia* group.

CASE 8 R. S., age thirty-six, manager of a grocery. This patient was seen in consultation Feb. 28, 1935 with a history of a severe attack of hemoptysis while on a hunting trip in Nov. 1934. He was said to have lost about one pint of blood. Following this he had morning cough with expectoration of 1½-2 ounces which was streaked for a few days. There were night sweats for the first three weeks. No sputum examination was made at the time. Since that time, his appetite had been poor, there had been moderate loss of weight, but without particular symptoms or disturbance of bowel function.

On examination he appeared anemic and underweight. The chest was long and narrow. There was moderate dullness and moisture at the apex of the right lung, but the rales were more numerous in the region of the middle lobe below the third rib, where approaching the axilla there was dullness which extended around to the spine. There were also a few fine moist rales on breathing

and cough in the upper left lobe near the sternum.

No tubercle bacilli were found in the smears examined at the city laboratory. Examination of a second specimen at the New York State Laboratory showed no tubercle bacilli in smears or cultures, but a yeast-like micro-organism resembling *Monilia* was found in the sputum cultures. This proved pathogenic when injected into a white rat.

The x-rays showed as follows: *Right*—General medium coarse mottling throughout the lung, most marked in the central portion. A few small dot-like points throughout but no definite beading along the bronchi as is frequently seen in tuberculosis. Two small nodes of marked density in the hilus. A small irregular annular shadow in the region of the inner third of the first rib. *Left*—Hilus thickened with large irregular nodes of moderate density. Some rather coarse mottling in the upper half of the lung. The apices do not appear to be involved. The right diaphragm is nearly a straight line and the cardiophrenic angle is very obtuse. *Left* negative.

A diagnosis was made of pulmonary Moniliasis, and treatment was advised of sodium iodide intravenously for two or three days, to be followed by the same by mouth.

The attending physician told me that this patient quickly showed marked improvement. I believe from my experience with other cases that his recovery will be complete.

CASE 9 L. T., age thirty-two. This patient was examined at the Tuberculosis Clinic on Feb. 1, 1935 as a possible tuberculosis contact. He was slightly overweight without elevation of temperature or increase of pulse rate. He had impaired resonance on the right side suprascapular.

The x-ray showed as follows: *Right*—Fine mottling throughout the whole lung extending well out toward the periphery. Hilus thickened and nodular. *Left*—Hilus definitely thickened. Bronchial markings similar to right though mottling is less dense. Diaphragm and angles normal.

No tubercle bacilli were found in the sputum. The predominating organism was *Monilia* of the yeast group which was proven at the New York State Laboratory to be pathogenic for a white rat.

Summary

Streptothrix and *Monilia* infections are frequently definite clinical and pathological entities.

Cultures of these organisms grow slowly, and it takes time for animal ex-

eight instances. Four of these were cases of traumatic cataract, two of which were further complicated by the presence of intraocular foreign bodies. In two patients there was an iris prolapse due to an old injury, and in one a contusion had caused an iridodialysis.

Postoperative sympathetic ophthalmia may occur in spite of any prophylactic

TABLE I—INCIDENCE OF SYMPATHETIC OPHTHALMIA FOLLOWING CATARACT EXTRACTIONS

Author	No of Cat Exts	No of cases	Percentage
Steffan	300	6	2 0
Eversbusch & Permerl	1420	2	0 14
Baverlein	860	0	
Theobald	7444	2	0 027
Lister A. E.	3-4000	1	
Puscariv	1000	0	
Gama & Pinto	1500	2	0 13

as Coppez⁷ maintains that if three days have elapsed, interference courts the danger of sympathetic inflammation. As a rule it is best handled by abscission of their iris and covering with a conjunctival flap, thus avoiding the danger that cauterization presents even when a flap is used.¹⁷ Cauterization was done in two clinically diagnosed cases which I have collected and both operators felt it may have been the reason for the involvement of the fellow eye.

DeGross¹³ has called attention to the fact that repeated operations add to the danger of the occurrence of sympathetic ophthalmia. More than one operation had been performed in ten of the cases in this series. The second intervention consisted

TABLE II—STATISTICS OF SYMPATHETIC OPHTHALMIA DUE TO INTRAOCULAR OPERATIONS

Author	No of cases S O	No of cases follow- ing op	Per cent	No of cases due to cat ext	% due to cat ext	No of cases due to other op	% due to other ops
Post	25	8	28 6				
Woods	28	3	10 7	2	7 1	1	3 6
Verhoeff	35	14	40 0	7	20	7	20
Fuchs, A.	100	31	31 0	?	?	?	?
Morax	5	1	20 0	1	20	0	0
DeGross	156	15	10 0	11	7	4	3
Theobald	11	3	27 2	2	18 2	1	9
Fuchs, E.	35	8	22 8	4	11 4	4	11 4
Joy	41	8	19 5	5	12 2	3	7 3
Total	436	91	20 9	32	10 3	20	6 4

measures one may take.^{17 10 20} But the adoption of safe and proper surgical procedures should greatly reduce the hazard, for if there is no undue postoperative uveitis in the operated eye there will probably be no sympathetic inflammation in its fellow. However, as ocular surgery depends so much upon the cooperation of the patient, it is not always possible to avoid an accident, either during the operation or in the early postoperative course. Such mishaps occurred in thirteen of the forty-four cases in this series. Prolapse of the iris resulted in nine instances, and in two there was also loss of a large amount of vitreous, and a gaping wound.

Iris prolapse presents a serious problem, for there is added to the danger of immediate contamination the possibility of a late infection. Generally, if it is of short duration it should be corrected immediately despite any reluctance to further traumatize a recently operated eye. However, if the defect has persisted for some time, and especially if the iris is protected, correction may be inadvisable,

TABLE III

	No of cases
Existing cause in 44 confirmed cases	
Cataract operations	
Senile cataract (combined extraction)	19
Congenital cataract	3
Traumatic cataract	4
Other operations on the iris	
Iris inclusion operations	5
Trephining	3
Iridectomy	7
Glaucoma operations	1
Iridodialysis repair	1
Excision anterior segment of the globe	1

of discussion in three cases, linear extraction in two, iridectomy in two, sclerotomy in two, and trephining in one case.

Of the twenty-six cases in this series resulting from cataract operations, nineteen followed combined extraction of the senile type. In ten of these there was some ontoward factor, either as to the condition of the eye before operation, or some accident occurred during the operation, or shortly afterward. Two cases followed an apparently uncomplicated extraction, in which the early postoperative course was uneventful. There had been nothing in the preoperative condition of the patients to indicate that any complication might re-

SYMPATHETIC OPHTHALMIA FOLLOWING INTRAOCULAR OPERATIONS

HAROLD H JOY, M D, F A C S, *Syracuse*

While sympathetic ophthalmia is an infrequent complication of intraocular surgery, it occurs sufficiently often and is serious enough a disease to warrant the interest of ophthalmologists

Although the older statistics are often misleading due to the inclusion of other types of uveitis, postoperative sympathetic inflammation probably occurs less frequently now than formerly, due to improved technic and asepsis^{1 2 3} Many authors have collected statistics on the incidence following cataract extractions, but the literature is rather barren regarding the percentage of occurrence after other intraocular operations Theobald,⁴ in making an exhaustive study of the records of the Illinois Eye and Ear Infirmary over a period of twenty years, found three proved cases in 10,366 intraocular operations It occurred twice in 7,444 cataract extractions (0.027 per cent) and once in 2,922 other intraocular operations (0.03 per cent) Table I shows the frequency following cataract operations as found by various authors While there is some variation in incidence (0 to 2 per cent) the composite table shows that only thirteen cases occurred in over 15,000 cataract operations (0.084 per cent) This means that sympathetic ophthalmia resulted only once in nearly 1,200 cataract extractions This infrequency is further demonstrated by the scarcity of cases reported in the literature Thus, Truc and Dejean⁵ were able to collect only thirty-three cases, Hambresin⁷ eleven cases, while Puscariu² states there are in all thirty-seven published cases of sympathetic ophthalmia following cataract extraction

Of 436 cases of sympathetic ophthalmia collected by various authors ninety-one (20.9 per cent) were attributed to intraocular operations (Table II) The figures vary from a minimum of ten per cent to a maximum of forty per cent In 311 of the cases, comparison in frequency is made between those following cataract

extractions (10.3 per cent) and those following other intraocular operations (6.4 per cent)

The rarity of sympathetic inflammation after intraocular operations is only relative, for it is also infrequent after perforating injuries It is one of the two undisputed exciting causes of this disease and probably accounts for at least twenty per cent of the cases Paradoxically, while sympathetic ophthalmia infrequently follows intraocular operations, at the same time intraocular operations are a frequent cause of sympathetic ophthalmia

Of forty-four confirmed cases which I have collected for this study, twenty-six were attributed to cataract operations, seventeen followed operations on the iris, and one resulted from excision of the anterior segment of the globe¹² (Table III)

Any operation involving the anterior uvea, no matter how slight, may result in sympathetic ophthalmia As the presence of inflammatory or degenerative changes¹⁸ possibly increases the hazard, senile cataract and glaucoma may be of some importance as predisposing causes Either one or the other of these two conditions is present bilaterally in the majority of patients who develop postoperative sympathetic ophthalmia, for they are the most common reasons for intraocular surgery This is demonstrated in the present series in which 77.7 per cent of the cases followed operation for either senile cataract or glaucoma Furthermore, one can scarcely conceive of an intraocular operation that does not involve an inflamed or diseased eye, and there are no exceptions in this series In fifteen cases an additional predisposing factor was reported One patient was highly myopic, and in another a melanosis of the choroid was discovered upon histologic examination While in two patients attacks of iridocyclitis had caused the formation of posterior synechiae The predisposing factor was the result of trauma in

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 29, 1936*

eight instances. Four of these were cases of traumatic cataract, two of which were further complicated by the presence of intraocular foreign bodies. In two patients there was an iris prolapse due to an old injury, and in one a contusion had caused an iridodialysis.

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sult. A moderate amount of cortex remained after extraction, but there was no iris inclusion, and in neither case was the reaction marked. But about the seventh and sixteenth day respectively, an iridocyclitis developed, which progressively increased in severity and eventually resulted in sympathetic ophthalmia of the fellow eye. H. Gifford described a similar case as the worst he had ever seen, and considered the possibility that the remaining cortex may be a contributing factor in the production of sympathetic ophthalmia. Our present concept of the allergic properties of the lens indicates that this may not have been an unreasonable assumption. In any event sympathetic inflammation seems to occur rarely after intracapsular operations. Apparently all of the nineteen cases in this series followed extractions in which a capsulotomy had been done.

Operations for congenital cataract rarely cause sympathetic inflammation. Of the three cases in this series two followed dissections, and one a linear extraction. All were characterized by severe reaction in the operated eye, and in two patients a linear extraction was later necessary to remove cortex. This resulted in loss of vitreous and prolapse of the iris in one instance.

If a traumatic cataract is due to a perforating wound it may be questionable whether the resulting sympathetic involvement is attributable to the extraction of the cataract or to the original injury. In three of the four cases in this series there had been a perforation and in two of these an intraocular foreign body was present at the time of the extraction. The interval between injury and operation ranged from two weeks to six years, and in only one patient in whom the interval was six years, was the eye inflamed at the time of extraction. A prolapse of the iris occurred in two patients. It was the result of the injury in one case, while in the other it was due to misbehavior during the operation.

The exciting cause in cases following operations on the iris is usually some form of glaucoma operation. With the exception of one which followed an iridodialysis repair operation, this was true in all of the seventeen confirmed cases in the present series. It seems rather strange

that such cases appear so infrequently in the literature, for most of the different operations which have been devised to relieve intraocular tension, permanently expose the uvea to infection,²¹ while in the inclusion operations there is the added hazard of the iris incarceration.

Although the idea of deliberate incarceration of the iris is contrary to good surgical procedure, it has become increasingly popular in recent years because of its efficacy in reducing intraocular tension. The presence of five cases in this series attributed to this type of operation indicates that it is not without danger. In the only instance in which a complication was reported, a large subconjunctival prolapse of iris and ciliary body had been absceded sometime after an iridenclesis.

Although sympathetic ophthalmia admittedly occurs infrequently after trephining, the extreme rarity of cases reported in the literature¹⁶ seems rather extraordinary, for intraocular infection is an ever present possibility. It may occur during the operation or at any later time while the fistula is still patent. Though late infections are more often of a purulent nature, even this is not proof against the development of sympathetic ophthalmia. None of the three cases in this series occurred as the result of a delayed infection. The exact exciting cause is somewhat open to questions for a second operation had been done in each case. The second intervention consisted of a sclerotomy, an iridectomy, and a trephining.

Sympathetic inflammation does not often follow iridectomy,²¹ for as a rule the operative trauma is not marked, prolapse of the iris is infrequent, and a keratome incision heals promptly and securely. But the presence of seven cases in this small series indicates that it is not rare. In two of the cases the iridectomy was followed by iris prolapse, and in one a melanosarcoma of the choroid was found after enucleation. In two patients, there was definitely no complication. In one an iritis appeared on the sixteenth day and was followed eight days later by hypopyon. While in the other patient a low grade iridocyclitis developed one month after operation without apparent cause.

Of the forty-four cases of postoperative sympathetic ophthalmia in this series

some definite preoperative pathological process was present in the operated eye in fifteen instances. An accident occurred during the operation, or shortly afterward in thirteen. While in ten patients more than one operation had been performed before the other eye became involved. In five of the patients more than one of the above complications occurred. The records of thirteen cases were too incomplete to determine the presence of any untoward factors. There are only six cases in which the histories showed an absence of some such extenuating condition. In three cases following cataract extraction and in two following iridectomy, and in one due to iridenclesia no untoward factor could be determined. There was an apparent absence of foci of infection and intercurrent disease. No

definite predisposing pathological process was found in the exciting eye before operation, and no accident occurred during the operation or in convalescence.

Too little is known of the pathogenesis of sympathetic ophthalmia to properly evaluate the importance of such predisposing factors. Statistics are not available to show their incidence in intraocular operations, or as to what percentage of these cases result in sympathetic inflammation. Although there is probably a tendency to unduly emphasize a complication if sympathetic ophthalmia results, the comparatively few cases reported in which no untoward factors occur, indicate that postoperative sympathetic inflammation is quite infrequent in their absence.

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Discussion

DR. HARRY M. WEED, Buffalo—Dr. Joy has done a good job in bringing the entire subject of sympathetic ophthalmia up to date and presents the results of painstaking and valuable study.

In the summary, Dr. Joy states that of the forty-four verified cases, seventeen followed operations upon the iris, and he also states that any operation on the anterior part of the uveal tract may lead to a sympathetic inflammation. This statement gives me an opportunity to discuss one angle of this subject about which very little has been said thus far, and that is the method of removal of certain types of intraocular foreign bodies. I wish here to report a case from which I believe we may be justified in drawing some rather definite conclusions.

In December 1922, a newsboy, thirteen years of age was using a hammer and chisel to cut the string binding his Sunday morning bunch of papers. A small splinter of steel $2\frac{1}{2}$ millimeters long flew up and struck his right eye perforating the cornea to such an extent that the greater part of the foreign body projected into the anterior chamber, hanging down toward

the lower angle. An attempt to remove this foreign body with an electromagnet through the wound of entrance was unsuccessful, and the foreign body soon dropped back into the anterior chamber becoming lodged on the lower part of the iris. A keratome incision was made at the lower limbus and a hand magnet was used with well-controlled current, and the foreign body removed through the limbal incision, a small iris prolapse occurred. The prolapsed iris was replaced immediately, apparently completely. The eye was kept under eserine for two days, at the end of which time the pupil was still not quite round and it seemed evident that a few fibers of the iris must be attached to the corneal wound at the limbus. The eye made a slow recovery and at the end of a month vision was normal and the eye, though for the most part white, would flush easily under manipulation, reading or exposure.

Five weeks after injury the eye became more acutely inflamed and KPs appeared, with a definite iridocyclitis. The boy was hospitalized and physical examination failed to reveal any sign of local or general infection except possibly in the tonsils which were moderately hypertrophied. These were removed.

A few days later the second eye became in-

flammed, and both eyes then went through a period of several weeks of iridocyclitis. Medical treatment was given consisting principally of foreign protein injections and large doses of salicylates.

The inflammation gradually subsided and at the end of six months the eyes were clear with vision 20/30 each, and he has had no recurrence since that time. Of course, no laboratory confirmation of the diagnosis of sympathetic ophthalmia was made inasmuch as both eyes recovered, but from the history of injury and the subsequent development of iridocyclitis, I believe we must accept the diagnosis in this case.

The point I particularly wish to make is in relation to relatively small intraocular foreign bodies that lie within the eyeball back of the anterior segment. A large number of these are not over two or three millimeters in greatest diameter, and correspond in a general way to the type of foreign body in the case which I have just described. There are two schools of belief or practice relative to the removal of these foreign bodies with the electromagnet. The older method, consists of drawing the foreign body forward into the anterior chamber, after which the problem becomes practically identical with that in my case, and the danger of iris involvement must always be considered. The other method, posterior route, consists in extracting the foreign body through an incision made in the sclera

somewhere back of the ciliary body. The principal objection to this latter method is the danger of detachment of the retina, and some ophthalmologists have very decided opinions on this subject. I recall having even heard one competent ophthalmologist make the statement that extraction of a foreign body through the posterior route constituted malpractice.

While the danger of detachment of the retina at the site of operation must be given consideration, I believe that if an incision two or three millimeters long is made in the sclera, starting five millimeters back of the limbus, we escape the ciliary body and the incision is through that portion of the retina which is firmly attached to the underlying uveal tract, and in this area detachment is extremely unlikely. But, granting that even a very occasional case of retinal detachment might occur, I am sure that with our present methods and results in surgical treatment of detachment of the retina, even this remote though possible danger is to be preferred to the possible danger of sympathetic inflammation from extraction by the anterior route.

I wish to recommend this posterior route method except in those few cases where removal of the foreign body anteriorly and probably through the wound of entrance, is the obvious method of choice.

'SPEAK UP' AT SOCIETY MEETINGS

Now that the season of society meetings is getting under way, it may be timely to pass along a word of advice from our good neighbor, the *Pennsylvania Medical Journal*. Remember, it says, that the assemblage in a room wants to hear, this is why they attend, and all speakers should regulate their voices that those present may have no difficulty in hearing. To travel the distance many do to attend the annual meeting to listen to certain papers and not to be able to hear the speaker is disheartening. There is no excuse for poor articulation.

There are some men who speak in public in a low tone, who normally have weak voices, who do not bear in mind that they are addressing an audience, and hence, never seem to realize the necessity for raising their voices.

There is the individual who invariably

looks at the floor when speaking and, to add to the difficulty of transmitting the voice, walks to and fro.

We beseech the attention of the members to this very important detail. We would urge all speakers to stand firmly on their feet, keep their heads raised, and speak sufficiently loud that the person farthest away in the audience may hear. This is imperative.

If members are unable to hear a speaker, they should have no hesitancy to arise to a point of order and request the speaker to speak more loudly. To call out "louder" from the audience is not always met with response.

Section officers should be alert in this matter, sense the situation, and request a speaker to raise his voice. It will greatly enhance the value of the meetings.

DANGEROUS DAN M'CROBE

A bunch of germs were hitting it up
In the bronchial saloon,
Two bugs in the edge of the larynx
Were jazzing a ragtime tune

Back in the teeth, in a solo game,
Sat dangerous Ack-Kerchoo,
And watching his pulse was his light of love,
The lady who's known as Flu —Sundial

PRESENT STATUS OF THE SURGICAL TREATMENT OF RETINAL DETACHMENTS

MARK J. SCHOENBERG, M D *New York City*

Introduction

The revival of the interest in the treatment of retinal detachments took place about seven years ago when Gonin reported on his results at the Amsterdam International Congress of Ophthalmology. The fundamental idea underlying the Gonin method as well as all its various modifications is that a reattachment of the retina is possible only when one succeeds in producing an inflammatory reaction in that area of the choroid which underlies the tear or tears of the retina. This idea has been adopted by a great majority of ophthalmologists and the results seem to speak in its favor.

Operative Methods and Their Trend

I Gonin's thermocautery method is built on three pillars (1) the discovery of the tear in the retina and its exact localization*, (2) the introduction of a cherry-red hot tip of a thermocautery through an incision of the sclera, choroid, and retina at the exact spot, corresponding to the retinal tear, (3) the proper after-treatment. (Figs 1 and 2)

The main disadvantages of this operation are that (1) the exact localization of the tear is difficult and the majority of eye surgeons fail in this respect in a large number of cases (2) The heat of the thermocautery is liable to burn too large an area of the choroid, retina, and vitreous, and to produce damage and traction scars which vitiate the final outcome of the operation.

II The Gust chemical cautery method (Fig 3) consists of

1 Performing in the sclera a ring of trephine openings surrounding the place where the retinal tear or tears are assumed to be located,

2 Applying a chemical caustic, potassium hydrate, to the exposed small areas of the choroid and neutralizing the surplus of the

* The details of the localization of the tear and of the operative technic have been given in previous papers¹

caustic by a half per cent solution of acetic acid

The advantage of this method is that there is no need of extremely accurate localization of the tear

The disadvantages, however, are several

A The length of the operation (2—3 hours),

B The grave damage it sometimes causes to the sclera, choroid, retina, and vitreous,

C The impossibility of controlling the amount of cauterization desired and the size of the area cauterized,

I have seen adhesions and scar tissue formed between the eyeball and the tissues surrounding it, causing disturbances of motility and even complete immobilization of the eye.

In conjunction with this method, Lindner has developed an important modification consisting of an injection of a minimum amount of caustic between the sclera and choroid. He reported some good results. The future will show how satisfactory this delicate and hazardous method can be.

III The diathermic coagulation method consists of the application of a carefully measured high frequency current either on the surface of the sclera by the aid of a small spherical electrode or directly to the choroid, by puncturing the sclera with various types of needle pointed electrodes. This method has been developed by Larsson, Weve, and Safar (Figs 4, 5, 6, 7)

The fundamentals are the same as in Gonin's method

1 Localization of the tear—which, however, does not present the same difficulties as in Gonin's. It is sufficient to know in which sector the retinal defect is and how far back from the limbus it is,

2 Proper performance of the operation,
3 Proper after treatment

The pyrometric circuit (Figs 8, 9) consists of two wires of different metals (copper and constantan), soldered together at their ends. The wires are completely insulated except for these junctions. The cold solder is immersed in an ice bottle (0° centigrade) while the hot solder constitutes the diathermic (pyro-

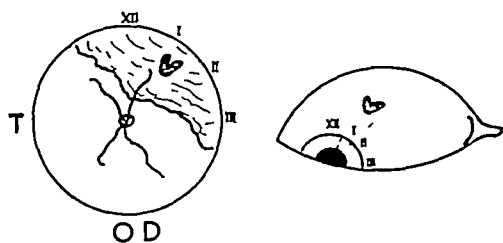


Fig 1 Localization of retinal tear

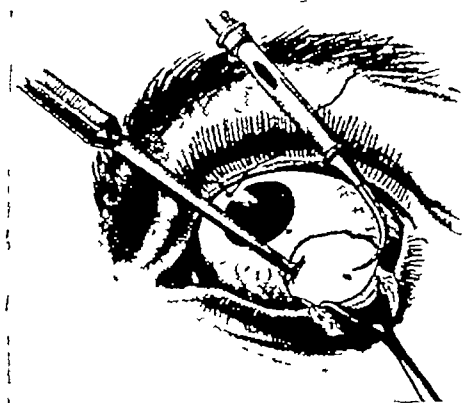


Fig 2 Gonnin method

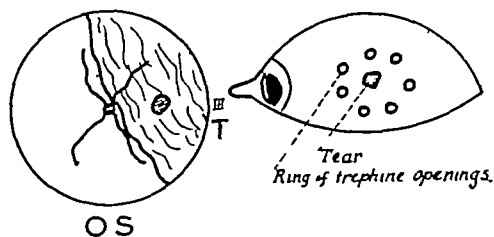


Fig 3 Guist method

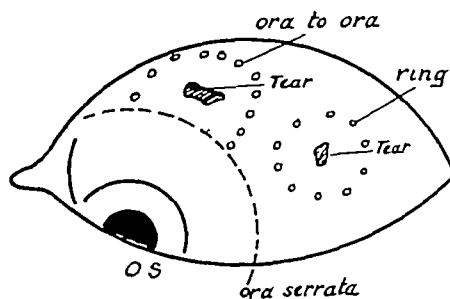


Fig 4 Guiding principle in surface or puncturing applications. If the tear is at or near the ora serrata, applications are made around the tear in a semicircle from ora to ora serrata. If the tear is further back, applications are made in a circle surrounding the tear.

metric) electrode. The copper wire is connected to the pyrometer, which is a galvanometer calibrated to read in degrees centigrade. The pyrometer records the difference in temperature between the two soldered junctions, and since the cold junction is always 0°C centigrade, the temperature of the hot junction can be read off directly.

The diathermic electrode remains cold during the passage of current, but the tissues traversed by the current are heated. If the electrode gets hot, it is only because it is in contact with the heated tissues. Consequently, the electrode can serve at the same time as a thermometer.

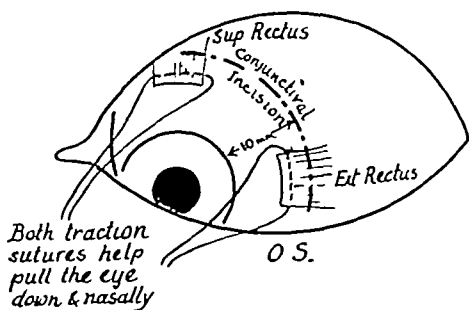


Fig 5 Method of pulling eye in position to expose the upper temporal quadrant of the scleral surface, in a case in which the tear of the retina was in the x o'clock meridian, fifteen mm behind the limbus of the cornea.

One of the terminals of the high frequency generator is connected to the copper wire leading to the active electrode. The other terminal is connected to the indifferent electrode in the usual manner.

The electrode is applied to the sclera with the current shut off. Then the current is opened and steadily increased until the pyrometer registers 80°C . It should take thirty seconds for this point to be reached, as this is the time required for a uniform heating of the sclera and choroid. The electrode is prevented from slipping by a short pin projecting from its center, which however is not long enough to perforate the sclera.

IV The electrolysis method, suggested by Vehhoef in 1916 has been recently revived by Vogt. It consists of numerous punctures with a very fine, sharp, and firm steel needle of the wall of the eyeball in the region of the retinal tear, right through the sclera, choroid, and retina. The cathode electrode (a fine needle) is

attached to a machine developing a very weak galvanic current ($\frac{1}{2}$ —1 milliamperes) The anode is applied on the surface of the eyeball or any other part of the body The point of the needle develops gas bubbles in the vitreous Each application lasts not more than one second Ophthalmoscopy localizes the relation of the bubble to the tear and thus informs the surgeon whether the punctures are made in the right place It is too early to decide as to the efficacy of this method

V The *Shahan thermophore* has been suggested to be used as a means of producing coagulating areas in the choroid

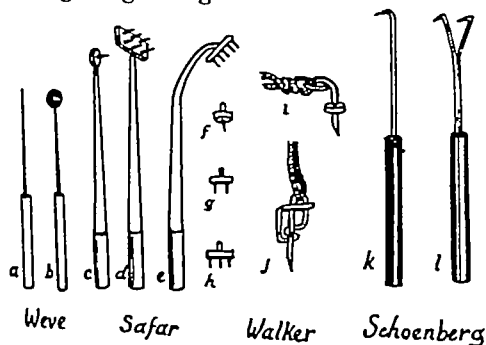


Fig 6 Various types of electrodes for diathermy

of eyes with retinal detachments I have had no personal experience with this method, but I doubt whether it will work out well The sclera is a tough, leathery, heat-resisting tissue To obtain a coagulation area in the choroid, one has to apply a considerable amount of heat to the outer surface of the sclera and thus would be sufficient to burn and damage it too much But, time will tell

VI Bietti of Italy has recommended the use of a mixture of carbon dioxide with acetone, applied on the sclera with the aid of a specially constructed syringe The effect of this application is to produce an inflammatory reaction in the choroid

Author's Personal Technic

After having tried for several years the various methods enumerated above, I came to the conclusion that so far the simplest and safest is the diathermic method I shall mention only the most essential features of the method as I have performed it during the past three years

Step 1 The patient should have a good restful sleep the night preceding the operation The bowels should be thoroughly cleansed by a high enema and a sedative of the barbitol group administered two hours before the operation A subconjunctival and retrobulbar injection, using one c.c. of one per cent novocain for each, are sufficient to produce the desired anesthesia for at least

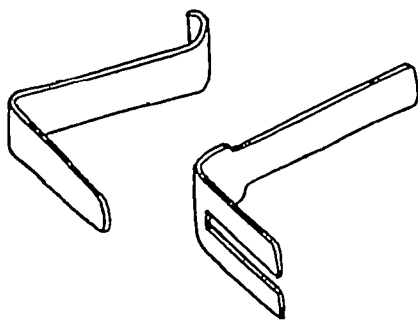


Fig 7 Retractors of monel metal used by the author Can be fashioned and cut according to need during the operation

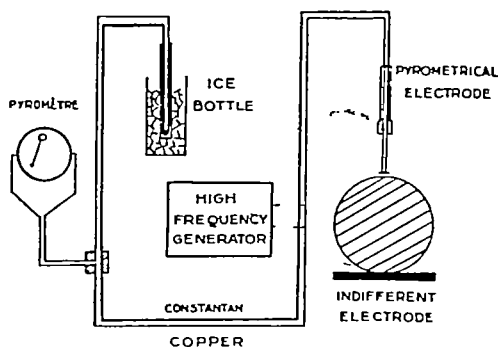


Fig 8 Coppez pyrometer circuit

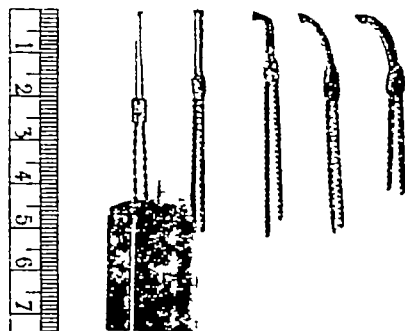


Fig 9 Coppez handle and electrodes

1½ hours Use butyn, one per cent solution, as drops

Step 2 A speculum is introduced. Parallel with the limbus corneae and at a distance of ten mm from it, the conjunctiva is incised. A suture is introduced underneath the tendons of the two recti muscles between which is located the operative field. With the aid of these sutures and a sharp double hook retractor, the eyeball can be pulled in a position most advantageous for the operator. The bulbar conjunctiva is undermined and the Tenon capsule freed from the episcleral tissue as far back as it is deemed necessary. Then, the speculum is removed and small, flat, very slightly moist sponges, not larger than a postage stamp, are introduced deep into the wound, between the Tenon capsule and the sclera. This and a few drops of adrenaline hydrochloride solution (1/1000) instilled on the sponges secure a dry clean scleral surface. Once this is obtained, two specially designed retractors are introduced underneath the Tenon capsule to provide the largest possible space necessary for the careful examination of the exposed surface of the eyeball. This examination consists of three procedures

a *Inspection* as to the existence of staphylococci, thinned out areas, thickenings, discolorations, vascularized patches,

b *Palpation* with the finger or with a probe as to the consistency of the sclera and tissues underneath,

c. *Transillumination*, which is made by the aid of the ophthalmoscope minus its lenses containing head, the light source being applied on the surface of the cornea in such a manner as to illuminate the interior of the eye. The sclera becomes illuminated like a Japanese lantern. The presence of a tumor is then easily perceived as a well-delimited black blotch (Fig 7)

Step 3 The application of the diathermic current. My experience is entirely limited to the Liebel-Flarsheim apparatus which has two dials one for regulating the amount of current delivered and the other, which provides the type of current desired. One can use the coagulating or the so-called "Retinal Detachment" current which is a mixture of coagulating and cutting current. The advantage of this type of current is that it contains enough of cutting qualities to make it easier for the puncturing needles to penetrate the sclera. My own procedure is as follows. Having decided in which sector or sectors (upper nasal, upper temporal, lower nasal, lower temporal) the operative area is located, I proceed first by applying surface diathermy. The electrode I use has a small sphere of 1½ mm. in diameter, the coagulating current is switched on and the power control is set between twenty and twenty-five (Fig 6)

All being set, the electrode is applied on the scleral surface and the foot switch releases the current. The electrode is kept applied gently on the sclera until the surface underneath the electrode is beginning to become gray. The foot switch is turned off and the electrode is reapplied on the adjoining place at two-three mm distance. A ring or a semicircular row of applications is made at the proper place, surrounding the tear or on a line starting from the ora serrata, running around and behind the tear area and ending again at the ora serrata on a point symmetrical and opposite the starting point. (Fig 4)

If the surface diathermy applications have been properly applied, there is no rupture of the sclera and no oozing of subretinal fluid. The eyeball becomes quite hard.

The next step is to use a double hook electrode (Fig 6). The power control is set at thirty to thirty-five and the "Retinal Detachment" current turned on. The double hook makes a series of punctures through the sclera, obliquely, in a row parallel and out—or inside the row of surface diathermic applications. While the subretinal fluid oozes out and the eye becomes softer, it is necessary for the power control to be stepped up to thirty-five—forty. The operative area must be sponged as dry as possible. Using as little traction or pressure on the eyeball as possible helps to prevent too much fluid from oozing out.

At the termination of the operation, rapid ophthalmoscopic examination usually reveals a number of grayish-white, round areas of coagulation of the choroid. Sometimes, when the subretinal fluid is thick and gelatinous, there is very little fluid oozing out. This occurrence does not always mean a failure.

Step 4 The wound is carefully inspected for the removal of a stray sponge, irrigated with a warm salt solution, and sutured.

Step 5 The after-treatment is simple and based on perfect rest and proper position of the head. Anything that may increase suddenly the blood pressure or intraocular pressure—coughing, sneezing, lack of general relaxation, emotional upset, tossing about, etc.—may be harmful. The proper position of the head and eyes means that the patient must lie constantly in such a way that the vitreous should press by gravity against the retina towards the underlying choroid of the operated area. This must be kept up for two weeks. To prevent any unnecessary motions, the patient has to be dissuaded, if possible, from moving the bowels for one week after the operation. After two weeks in bed the bandage is taken off and a stenopeic spectacle is to be worn for two months. Sutures are to be removed

about four weeks after the operation. The first fundus examination is deferred for one week after the surgical intervention.

Results

The percentage of successes obtained by the various methods is shown in Table I.

TABLE I

Method	Obtained by	Per cent
Gonin	Gonin	53
	European	39
	American	40
Guist	Guist	40
	American	47
Diathermy	Weve	65
	Larsson	50
	Safar	70
	Coppes	35
	British Surgeons	47
	American	49
	Knapp	
	Dunnington Macne McKeown	
	Schoenberg*	
	Gracie	
	Walker	
	Fisbel	
	Peter	

*In my last series of forty cases sixty per cent cures were obtained.

Complications

During the operation

- 1 Slight diffuse oozing
- 2 Burning of skin of the lids with the active electrode.
- 3 Traumatic abrasion of cornea (slipping of retractor, etc.)
- 4 Early collapse of the eyeball from loss of too much fluid

Postoperative

- 1 Exophthalmos and marked chemosis from deep hemorrhage and tenonitis
- 2 Copious secondary external hemorrhage
- 3 Herpes and ulcer of the cornea
- 4 Hemorrhage in the vitreous
- 5 Ocular hypotony or hypertension
- 6 Iritis, uveitis, iridocyclitis
- 7 Diplopia from defective reinsertion of a muscle or from adhesions and cicatrices
- 8 Massive retinal coagulation, edema, and hemorrhages, necrosis of retina
- 9 Orbital cellulitis
- 10 Cataract.

Recurrences

The appearance of the detachment at the same location takes place within three to five weeks after the operation. However, Gonin has seen four recurrences after one year—two after two years and one after three years. I have seen two recurrences after one and two years respectively.

Causes of Failures

Failure may be preventable or unavoidable. As our experience becomes richer, many of the unavoidable failures will enter the group of the preventable ones.

Preventable operative failures due to (1) Diagnostic errors (2) Technical errors (3) Postoperative treatment errors.

Unavoidable failures due to Present day ignorance of diagnostic refinements establishing operative indications and contra-indications.

Questions Difficult to Answer

Every surgeon meeting with the question "to operate or not to operate" solves it, at times, in a way he thinks later on to have been against his better judgment. Some of the questions we meet are

Question 1 Should a patient with a marked arterial hypertension be operated for a retinal detachment? A The fear of the very dreaded complication—vitreal hemorrhage—advises against it. Two of my successful cases had 190 systolic pressure.

Question 2, 3 Should one reoperate? How many times should the operation be repeated even in a case whose other eye is in good condition? A As long as there is hope that a reattachment of the retina may be obtained, one should reoperate. In one of my cases with high myopia, whose retina became reattached only after a second operation, the other eye became afflicted with the same disease one year later. The second eye could not be saved on account of a massive hemorrhage in the vitreous. If I would have insisted less on a second operation on the first eye, the patient would have lost the sight in both eyes. A As many times as necessary.

Question 4 Should hypotonic cases be left alone? A. No. Some of them respond well to treatment.

Question 5 Should cases with a retinal detachment in an eye with tuberculous chorioretinitis and phlebitis be operated on? A. One case of my own had a condition of this sort and two operations were successful in reattaching the retina.

Question 6 Is there an age limit? A. My oldest patients have been sixty-nine years of age. They went through well with the operation and after treatment.

Question 7 Should old cases of one year or more standing be operated? A. The answer depends on (a) whether the patient has one good eye, (b) how the condition and appearance of the tissues of the eyeball are.

Literature contains a few cases of reat-

tachment with recovery of some vision, even when the operation has been performed one or several years after the onset of the detachment.

What Is the Trend of the Surgical Endeavor to Cure Retinal Detachments

Judging from the evolution of the problem which took place during the past few years, I would say that the tendency is towards simplification of the method

Any of the various agents employed—thermal (heat or cold), chemical, electric—have the same effect, *producing a localized inflammatory reaction in the choroid*. The future will undoubtedly develop simpler and better ways of obtaining this result.

667 MADISON AVE.

Reference

- 1 Schoenberg, Mark J. *Archives of Ophthalmology* 3 684, 1930; 6 675, 1931; 9 982, 1933; 12 709, 1934; 13 252, 1935. *Pennsylvania Medical Jour.*, May 1934

Discussion

DR. JOHN H. DUNNINGTON, *New York City*—Dr. Schoenberg's review of the methods used in the surgical treatment of detachment of the retina is timely because it not only shows what progress has been made but it also brings home to us how much remains unsolved. I have had no personal experience with the technic he employs but I feel confident that it is a good method. I believe that there are several technics any one of which properly followed will give favorable results. At the present time I am employing the Lacarrere electrodiaphane and find it easier to use than the Walker pins and just as satisfactory.

This electrode of Lacarrere consists of a handle covered with insulating material. At its end is the active electrode, made from a thin steel or platinum wire which can be made to slide within a thin glass tube by means of a movable piece located in the handle. The end of this glass tube is slightly bent, and beveled for adaptation to the sclera. This electrode has the advantage that the depth of penetration into the ocular membranes can be graduated, and therefore one can obtain either a localized reaction to the choroid alone without perforation, or a perforation with drainage of subretinal fluid. It may be introduced under the muscles or carried to posterior regions of the eyeball, with the tube protecting the wire. The latter is not projected until the end of the glass tube is in contact with the desired place to be treated. Moreover, even if the operative field contains fluid, cauterization may be performed if the end of the glass tube is held pressed against the surface of the sclera.

Judging from my experience the most unfavorable sign accompanying a detachment is a profound hypotony, i.e., an intraocular tension of six or less (Schiotz). In the vast majority of these cases the results are unsatisfactory. If surface applications of diathermy will raise the intraocular tension, we may be more fortunate in this group. It hardly seems necessary to urge that tonometric readings should constitute a part of

the preliminary work up in every case of detachment.

Another bad omen is a detachment of great extensiveness. A few cases of almost complete detachment have responded to surgical treatment but our chances of success are much less in an extensive detachment. Macne and I in 1934 in an analysis of 150 cases of detachment of retina found that in ninety-seven with only one-half of the retina detached a cure was effected in 49.5 per cent, in thirty-six with approximately three-fourths of the retina detached a good result was obtained in twenty-five per cent and in twenty-one with almost complete detachment a cure was effected in only 9.5 per cent. Of course one may argue and with good reason that in an extensive detachment the intraocular tension is likely to be quite low and the vitreous degenerated but even when this is not true the mere extent of the detachment seems to have a very definite bearing upon the result.

While I agree with the author that one may succeed in curing a detachment in a person with an arterial hypertension, I look upon the presence of retinal arteriosclerosis as a most unfavorable sign and therefore guard my prognosis even more carefully.

Detachments accompanying inflammatory lesions should in my opinion be treated conservatively until the active process has subsided. I am sure Dr. Schoenberg will remember an illustrative case of this type he saw for me several years ago. This young man had a tuberculous choroiditis and detachment in his only eye which was treated conservatively from March to October 1931, before resorting to surgery. The Guist operation was done at that time with restoration of field and a central vision of 20/50, which he retains to date.

Dr. Schoenberg has intimated that with the newer methods exact localization of the hole is not so essential. This, I believe, is true because the entire detached area should be treated placing of course particular emphasis upon the region of the hole.

DR SEARLE MARLOW *Syracuse*.—This discussion is based on references to the recent literature, particularly the French Archives of Ophthalmology, as personal experience with the subject is negligible.

It does not seem desirable or profitable to inject the still unsettled debate as to the causal relationship of tears at this time. There is considerable evidence on both sides which time will not permit reviewing. It does seem worth while to consider how nature cures detachment. As Pascheff has recently pointed out¹ nature's method consists in the absorption of the subretinal fluid and the production of adhesions between the retina and choroid. Pascheff objects to the extensive mutilating operations which have been proposed by those who have never seen a spontaneous cure. His procedure consists in trephining the sclera (15 mm trephine) on either side of a

the individual operator with the expectation of approximately fifty per cent of cures. Thus, to be sure, is a conservative figure but the general truth of the statement is well-illustrated by Table I.² A second table compiled from the reports of five different operators comprising a total of 259 cases is also presented. The average of the percentage of cures is found to be 49.8 per cent. Undoubtedly the percentage of cures will rise as the cases are more carefully selected and the skill and judgment of the operator increases with experience.

I am sure Dr Schoenberg will agree that a great deal of the present status of the surgical treatment of retinal detachment and its future status, depends upon the careful preliminary examination of the case and the proper selection of cases. He has not had an opportunity to discuss the preliminary study of these cases but in the ques-

TABLE I—BASED ON 300 CASES

	<i>Per cent</i>
Obliterating Thermopuncture (The oldest after five years)	49
Suprachoroidal galvano-cautery	58
Juxtachoroidal galvano-cautery	62
Chemical technic (Guist)	33
Perforating diathermo-coagulation	55
Pyrometric diathermo-coagulation	58

rectus muscle in the region of the detachment. The choroid is then perforated with a diathermic needle to allow the escape of fluid and produce two fistulae. The action of the muscle by compression aids the drainage. The patient is confined to bed only eight days.

In a paper in which are discussed some of the pathological processes which take place in the operative cure of detachment L. Weekers proposes a somewhat similar procedure. Too many such perforations are to be avoided—not more than six being advised. Weekers objects to the pyrometric electrode of Coppez and to other diathermic procedures because the thickness of the sclera varies considerably not only from one eye to another but also in different regions in the same eye. He believes that this variation is more easily allowed for by careful cauterization.

The procedure that Dr Schoenberg has adopted has already been suggested and used successfully by Mr J Cole Marshall. It is a combination of the surface coagulation, according to Larsson, with the micropuncture method of Weve and Safar.

So many different procedures have been advocated and are constantly being improved upon that it seems fair to conclude that the operative procedure itself has reached the stage at which one can be chosen to suit

TABLE II.

	<i>Per cent</i>
R Affleck, Grewes 36-70	51
J Cole Marshall	58.6
Safar Method	47
Gouin Method	60
P H Adams 14.7 (Ejes)	50
T H Butler 21.6-6	38
T Keith Lyle 80 cases	43.8
Average	49.8

tions he has raised, he has made an attempt to clear the problem of the proper selection of cases. The importance of preliminary study and of not being in too great a hurry to operate all cases is exemplified by the fact that spontaneous reattachment can occur. Villard has collected some nine well-studied cases. To emphasize this still further the following case is presented.

N G., an Indian, age forty-eight, was admitted to the Syracuse Memorial Hospital Oct 10 1931 with the history of pain and rapid failure of vision of his left eye of five days duration. In his past history there was nothing significant except that he admitted a G C infection in 1916. His general physical examination was negative except for a scar on his prepuce. His Wassermann was 4+.

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tachment with recovery of some vision, even when the operation has been performed one or several years after the onset of the detachment.

What Is the Trend of the Surgical Endeavor to Cure Retinal Detachments

Judging from the evolution of the problem which took place during the past few years, I would say that the tendency is towards simplification of the method

Any of the various agents employed—thermal (heat or cold), chemical, electric—have the same effect, *producing a localized inflammatory reaction in the choroid*. The future will undoubtedly develop simpler and better ways of obtaining this result

667 MADISON AVE.

Reference

- 1 Schoenberg, Mark J *Archives of Ophthalmology*
3 684 1930 6 675, 1931 9 982, 1933, 12 709, 1934
13 252, 1935 *Pennsylvania Medical Jour* May 1934

Discussion

DR. JOHN H DUNNINGTON, *New York City*—Dr Schoenberg's review of the methods used in the surgical treatment of detachment of the retina is timely because it not only shows what progress has been made but it also brings home to us how much remains unsolved. I have had no personal experience with the technic he employs but I feel confident that it is a good method. I believe that there are several technics any one of which properly followed will give favorable results. At the present time I am employing the Lacarrere electrodiaphase and find it easier to use than the Walker pins and just as satisfactory.

This electrode of Lacarrere consists of a handle covered with insulating material. At its end is the active electrode, made from a thin steel or platinum wire which can be made to slide within a thin glass tube by means of a movable piece located in the handle. The end of this glass tube is slightly bent, and beveled for adaptation to the sclera. This electrode has the advantage that the depth of penetration into the ocular membranes can be graduated, and therefore one can obtain either a localized reaction to the choroid alone without perforation, or a perforation with drainage of subretinal fluid. It may be introduced under the muscles or carried to posterior regions of the eyeball, with the tube protecting the wire. The latter is not projected until the end of the glass tube is in contact with the desired place to be treated. Moreover, even if the operative field contains fluid, cauterization may be performed if the end of the glass tube is held pressed against the surface of the sclera.

Judging from my experience the most unfavorable sign accompanying a detachment is a profound hypotony, i.e., an intraocular tension of six or less (Schiotz). In the vast majority of these cases the results are unsatisfactory. If surface applications of diathermy will raise the intraocular tension, we may be more fortunate in this group. It hardly seems necessary to urge that tonometric readings should constitute a part of

the preliminary work up in every case of detachment.

Another bad omen is a detachment of great extensiveness. A few cases of almost complete detachment have responded to surgical treatment but our chances of success are much less in an extensive detachment. Macne and I in 1934 in an analysis of 150 cases of detachment of retina found that in ninety-seven with only one-half of the retina detached a cure was effected in 49.5 per cent, in thirty-six with approximately three-fourths of the retina detached a good result was obtained in twenty-five per cent and in twenty-one with almost complete detachment a cure was effected in only 9.5 per cent. Of course one may argue and with good reason that in an extensive detachment the intraocular tension is likely to be quite low and the vitreous degenerated but even when this is not true the mere extent of the detachment seems to have a very definite bearing upon the result.

While I agree with the author that one may succeed in curing a detachment in a person with an arterial hypertension, I look upon the presence of retinal arteriosclerosis as a most unfavorable sign and therefore guard my prognosis even more carefully.

Detachments accompanying inflammatory lesions should in my opinion be treated conservatively until the active process has subsided. I am sure Dr Schoenberg will remember an illustrative case of this type he saw for me several years ago. This young man had a tuberculous choroiditis and detachment in his only eye which was treated conservatively from March to October 1931, before resorting to surgery. The Gust operation was done at that time with restoration of field and a central vision of 20/50, which he retains to date.

Dr Schoenberg has intimated that with the newer methods exact localization of the hole is not so essential. This, I believe, is true because the entire detached area should be treated placing of course particular emphasis upon the region of the hole.

DR. SEARLE MARLOW, *Synopsis*.—This discussion is based on references to the recent literature, particularly the French Archives of Ophthalmology, as personal experience with the subject is negligible.

It does not seem desirable or profitable to inject the still unsettled debate as to the causal relationship of tears at this time. There is considerable evidence on both sides which time will not permit reviewing. It does seem worth while to consider how nature cures detachment. As Pascheff has recently pointed out¹ nature's method consists in the absorption of the subretinal fluid and the production of adhesions between the retina and choroid. Pascheff objects to the extensive mutilating operations which have been proposed by those who have never seen a spontaneous cure. His procedure consists in trephining the sclera (15 mm trephine) on either side of a

TABLE I.—BASED ON 300 CASES

	Per cent
Obliterating Thermopuncture (The oldest after five years)	49
Suprachoroidal galvano-cautery	58
Juxtachoroidal galvano-cautery	62
Chemical technique (Guist)	33
Perforating diathermo-coagulation	55
Pyrometric diathermo-coagulation	58

rectus muscle in the region of the detachment. The choroid is then perforated with a diathermic needle to allow the escape of fluid and produce two fistulae. The action of the muscle by compression aids the drainage. The patient is confined to bed only eight days.

In a paper in which are discussed some of the pathological processes which take place in the operative cure of detachment L. Weekers proposes a somewhat similar procedure. Too many such perforations are to be avoided—not more than six being advised. Weekers objects to the pyrometric electrode of Coppez and to other diathermic procedures because the thickness of the sclera varies considerably not only from one eye to another but also in different regions in the same eye. He believes that this variation is more easily allowed for by careful cauterization.

The procedure that Dr. Schoenberg has adopted has already been suggested and used successfully by Mr. J. Cole Marshall. It is a combination of the surface coagulation, according to Larsson, with the micropuncture method of Weve and Safar.

So many different procedures have been advocated and are constantly being improved upon that it seems fair to conclude that the operative procedure itself has reached the stage at which one can be chosen to suit

the individual operator with the expectation of approximately fifty per cent of cures. This, to be sure, is a conservative figure but the general truth of the statement is well-illustrated by Table I.² A second table compiled from the reports of five different operators comprising a total of 259 cases is also presented. The average of the percentage of cures is found to be 49.8 per cent. Undoubtedly the percentage of cures will rise as the cases are more carefully selected and the skill and judgment of the operator increases with experience.

I am sure Dr. Schoenberg will agree that a great deal of the present status of the surgical treatment of retinal detachment, and its future status, depends upon the careful preliminary examination of the case and the proper selection of cases. He has not had an opportunity to discuss the preliminary study of these cases but in the ques-

TABLE II.

	Per cent
R. Affleck, Grewes 36 70	51
J. Cole Marshall	58 6
Safar Method	47
Gonnin Method	60
P. H. Adams 14 7 (Eyes)	50
T. H. Butler 21-6 6	38
T. Keith Lyle 80 cases	43 8
Average	49 8

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widespread perivascular infiltration and some irregularly scattered pigmentary changes in both retinae. Vision was 6/12 with his glasses at the time of discharge. Five months later it was R 6/6, L 6/12 with correction.

If such a case were successfully operated early the good result would be attributed to the operation. It is not the intent of this

citation to do more than to urge careful study in each case and to allow a reasonable period of medical treatment before subjecting the case to surgery.

References

- 1 Pascheff, *Arch. d'opht.*, 52 717, 1935
- 2 Veil, F., and Dollfus, M. A. *Ibid.*, 52 781, 1935

MUTUAL TRUST BETWEEN DOCTOR AND PATIENT

The patient who distrusts his physician will not and cannot tell him the whole truth and nothing but the truth, says the *Journal* of the A.M.A. The patient who subconsciously doubts his physician may censor facts at the expense of his recovery. The physician who lacks the confidence of a patient will try to fill the gaps in his knowledge with guesses and laboratory gadgets or else take refuge in a "look and a bottle." This has happened whenever government, contracts or other arrangements in the distribution of medical service have disturbed or destroyed continuous, confidential, personal relations between patient and physician. In some systems of insurance and workmen's compensation, medical associations—usually after years of struggle—have restored some sort of freedom of choice and mutual confidence. The result has always been an improvement in the service. Is it necessary to introduce systems that destroy these essential features of good medical service?

The medical profession has always held to the principle that change in medical service must have the single objective of better care for the health of those who need such service. Physicians are not interested in arguments for change based on the profits that might accrue to financial and industrial interests, on political expediency or even on their own apparent financial advantage, if the service is to suffer thereby.

Through the experience of centuries in many different forms of society the medical profession has learned that certain elements are essential to good medical service. One of these elements is mutual confidence, which springs from the freely chosen association of physician and patient. Compulsory association sows distrust.

Patients, not diseases, are the objects of medical treatment. Treatment rests on a meeting of two personalities, the patient and his physician. Successful, helpful relations must be between these two personalities and not between an institution, insurance system, laboratory or industry and a personality.

The patient who suspects that interests hostile to him may be influencing the physi-

cian will consciously or unconsciously describe his symptoms with a view to meeting the supposed or real antagonism. Modern psychiatry confirms this conclusion and emphasizes its importance. Laboratory technic has not displaced the necessity of confidence in diagnosis, nor has elaborate equipment made it unnecessary in treatment.

Free choice is an essential element in furthering medical progress. It is the most effective method yet discovered to insure the "survival of the fittest" in the medical profession. The selection is not always perfect, but it is more fair and impartial than selection influenced by financial or political considerations. Coercion of the decision distorts and corrupts the verdict of professional success. Professional progress has always rested on high standards of admission and then on free competition, within the limits of approved ethical regulations.

The individual choice may not always be wise, but a compulsory choice hampers the success of the best physician, while a free choice helps him to give the best service of which he is capable. Potential power of choice tends to hold all medical service to a high plane.

Economic compulsion of choice has the same evil effects that have always followed advertising and solicitation by the physician. In practice, compulsory choice is almost always accompanied by advertising and solicitation, and the choice is often made by some impersonal corporation or institution that is concerned more with other interests than with the health of the patient. This impersonal body selects a physician not for an individual patient but for a group.

Group selection usually involves mass treatment. This policy is being urged on the medical profession just as analogous fields are rejecting it. A generation ago crime and insanity were treated almost exclusively by mass confinement in asylums and prisons, mass education was glorified and mass treatment of poverty by alms and in poorhouses generally approved. Progress in criminology, psychiatry, education and social work has been measured largely by the extent to which individual personal relations have supplanted mass measures.

REPORT OF POISONING BY *CICUTA MACULATA*

Water Hemlock

D ROGER HAGGERTY, M D, *Arkport*, and JOHN A CONWAY, M D,
FELLOW A P H A, *Hornell*

The American Water Hemlock, "*Cicuta maculata*", and its varieties, is one of the most deadly and fatally toxic wild plants found in the United States^{1,9,10,11} or temperate climates, and is annually the cause of many deaths and poisonings, both in human beings and domestic animals

In New York State, excluding accidental poisonings from the eating of some one of the well-known deadly fungi "mushroom poison," *Cicuta* is, we believe, the most frequent and common cause of plant poisoning fatalities, especially among children

In presenting this paper, the authors feel they have little to offer that cannot be elicited from a review of the existing toxicology and medical literature. However, in reviewing and studying a considerable number of *Cicuta* case poisonings and reports, it has been noted that in nearly all instances the physician admittedly states that he was, when called to the case, unfamiliar with the plant,² its toxicology or the symptoms and treatment of the condition, a diagnosis as to the specific poison usually being made later from the history of the patient eating the root, and from the literature

The popular local name of a certain plant, unless the scientific name is known, serves poorly to identify the plant to which reference is made. For instance, *Cicuta maculata*, the variety found in New York State and, for the most part, throughout the East, is commonly and popularly known, in different sections, by names not at all related or referring in many instances to the same plant. Commonly, "*Cicuta*" may be known locally as musquash, water hemlock, wild parsnip, water parsnip, spotted hemlock, beaver poison, muskrat weed, cowbane, children's bane, death-of-man, snake-weed, and many others

The evident lack of medical and lay information regarding the toxicology of

water hemlock has moved the authors to present their studies and observations regarding this plant, as more or less of a public health problem, especially in rural sections

Cicuta is represented in the United States by at least eight species, all of which seem to be almost equally deadly. *Cicuta occidentalis* is found mostly in the Rocky Mountain region, *Bulbifera* in the middle northwest, while *Cicuta vagans* is found extensively throughout the Pacific Northwest. *Cicuta virosa* is the European variety

The plant, *Cicuta maculata*, as found growing in New York State,³ is an erect, tall, perennial, glabrous herb, three to six feet high, with purplish-lined, hollow stalks, and narrow pinnate leaves, with veins ending in the leaf notch, and with small, greenish white umbellicated flower heads. The root system consists of several tubiform, bulbous, fleshy root-clusters branching radially from a central root-stock much resembling the garden artichoke or small dahlia tubers

Cicuta poisoning usually occurs in the early spring months when the fleshy tuberous roots are eaten, particularly by children, being mistaken for the common garden or Jerusalem artichoke, which it resembles. At this time the roots may be heaved out of the ground by frost, or washed out by spring rains, and are frequently found exposed along the margins of creeks or ditches. The plant is distributed over much of New York State and is found in open grassy marshes and thinly wooded swamps, along backwaters and ditches. In two cases reported, the roots were picked up from the border of a muck-drainage ditch on celery land

The toxicity of *Cicuta* has been definitely recognized in this country since the middle of the Sixteenth century, before which time it was confused with the European spotted hemlock, "*Conium maculata*," a biennial plant not native to

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died April 4, 1912 Death certificate gives the cause of death as accidental poisoning from eating water hemlock. The history and description furnished by the two physicians who saw the case is typical of *Cicuta* poisoning. A portion of the root eaten was also identified as *Cicuta maculata*. The boy ate the root, which he mistook for the garden artichoke about 2 P.M. and died about three hours later, following prolonged, violent, epileptiform convulsions.

CASE 3 E. E. A., male, age sixteen, died March 23, 1929. The cause of death as given on the death certificate was accidental poisoning due to eating "*Veratrum Viride* Tubercle." Duration of illness was about four hours.

CASE 4 R. W. C., male, age sixteen, died March 24, 1929. The death certificate gives the cause of death the same as Case 3, duration of illness—twenty hours. Cases 3 and 4 were companions on a hike, ate the same roots, and were taken ill at the same time. A very indefinite and incomplete medical history and symptomatology states that the roots eaten by the boys were never definitely identified. However, the physician, now an aged retired practitioner, states the plant eaten was "wild parsnip," and that severe, early, and continuous convulsions were the principal, clinical symptoms.

Veratrum viride, white or green hellebore, "Indian Poke," is poisonous. However, it would be difficult to imagine a child being able to dig and eat the root which is large, deep-set in the ground and of a bitter, acrid taste. Convulsions would be also rare from *Veratrum* poisoning, the symptomatology of which is almost identical with *Aconite* poisoning. From the above history both boys undoubtedly died from *Cicuta* poisoning.

CASE 5 L. W. B., female, age forty-three, died April 2, 1933. Death certificate states as the cause of death acute gastritis due to eating leeks or "Indian Turnip Poisoning." The physician who treated this case has since died, so that no very accurate history from the medical aspect could be obtained. Patient was known to be an epileptic and mental defective. History from the family was to the effect that other members of the family had eaten of the same leeks without ill effect. As to the Indian turnip, nothing further could be learned. Indian turnip is not poisonous, furthermore due to the intense, burning, and acrid taste of this root, very little was likely to have been eaten. Death, if due to eating a poisonous root, was very probably due to *Cicuta maculata*.

CASE 6 E. M. B., female, age ten, died May 5, 1931. Death certificate states "from eating poison berries." Certificate was signed by coroner, who stated that the child accompanied the father into the woods where he was engaged in cutting wood. Father thought he noticed her eating berries. However, on later search, none of these berries could be located. From a clinical review of the symptoms, the coroner states that they definitely resembled those of *Cicuta* poisoning and were probably due to that plant.

In a study of a number of additional death certificates, statements were so indefinite as to the causes of death or the plant, root or berries eaten, that no positive deduction could be made as to the specific plant eaten.

Symptoms

The symptoms of *Cicuta* poison, as given in the recovered case just reported, are definitely classical and are those usually found and described in all cases of *Cicuta* poisoning.

Treatment

There is no specific treatment or known antidote for this drug. Early stomach lavage or emesis is always indicated, even if the case is seen late. Cases where free vomiting has occurred early usually react more favorably and give a more hopeful progress.

Symptoms should be combated as they arise. Supportive treatment with control of convulsions is of major importance and usually should be carried out, as in a case of strychnine poisoning.

Miller⁴ reports the use of sodium amytal intravenously with excellent results.

From our findings and study of the available death certificates and records in the New York State Department of Health, *Cicuta* as a cause of death, particularly in children is certainly more frequent than is usually supposed.

Physicians in attendance on plant poisoning cases should be more particular and definite in ascertaining the specific cause of the poisoning and sign death certificates with the proper cause of death. Further, such records, unless specific and definite, should not be accepted by the State Department without a thorough investigation.

this country, though naturalized from Europe. The latter is supposed to have been the poison "potion" administered to criminals by the early Greeks and Romans, and the drug which caused the death of Socrates.

The early appearance of intensely violent convulsions usually serves to definitely differentiate *Cicuta* from *Conium* poisoning, as they are said not to occur from the latter drug.

Case Report

H F, female, age fifteen, gave no history of illness except for the usual children's diseases.

About 5 P M on March 24, 1935, Dr D R. Haggerty was summoned by telephone, the information given, being that the child had been found unconscious. After a four mile drive, the patient was found lying quietly on a davenport in living room. Her mother stated that the girl was found unconscious on the bathroom floor, was rigid, and could not be roused, she was revived, however, in a few minutes and vomited considerably, complaining of dizziness and faintness.

While patient's mother was giving this brief history, patient had a severe convulsion with violent muscular twitchings, moderate opisthotonos, eyes rolling, pupils dilated, frothing at the mouth, moderately cyanosed, and neck very rigid. Patient was given one-sixth grain morphine and sent to hospital at once.

While waiting for the ambulance, inquiry brought out that during the afternoon, she was playing with other children near a muck field and found some roots which she and the other children thought were artichokes. Patient ate one bite of one of the roots, but because of its peculiar, bitter taste, threw the remainder away. About thirty minutes later patient felt nauseated and faint, and complained of severe abdominal cramps. Went to bathroom where she was found by her sister.

Patient was admitted to hospital at 5 45 P M, and had a severe generalized convulsion on a stretcher while being wheeled to her room. This lasted about four minutes and was followed by stupor. Vomiting continued at intervals until next afternoon. Had two more convulsions during the night but these were less severe. Muscular twitchings continued until next morning, gradually becoming less frequent and less severe. Heart rate came down in four hours to ninety and quality improved. Voided involuntarily until next morning.

The physical examination at hospital revealed a young, well-developed girl. Chest and lungs clear throughout. Breathing slow and shallow. Heart sounds weak and distant, rate 120, rhythm normal. Temperature was 99.4 F rectal.

Abdomen Recti-muscles rigid. *Extremities* moderately rigid. Marked frequent and irregular muscular twitchings, involuntary urination. Reflexes very active.

Urinalysis Sp gr 1020. No albumin. Slight trace of sugar. No casts. No crystals. Blood count normal.

Treatment

General supportive and palliative measures were used. Because of frequent vomiting, gastric lavage was not done. Patient was frequently given as much warm soda water as she would take. Morphine was given to control convulsions and to combat shock, and high hot colonic irrigations every four hours. External heat to body and pilocarpine to produce diaphoresis.

Thirty-six hours after eating root, appeared fairly well. Complained of neck being lame and sore. Some nausea still present. Recovery complete in forty-eight hours—no ill after effects.

Root eaten was identified as *Cicuta maculata* by Mr William Groesbeck, Hornell Laboratory.

Additional Death Reports

In a further investigation of plant poisonings in New York State, the following deaths, due undoubtedly to this plant, were investigated and studied.

CASE 1 H E W, male, age eleven, died on April 9, 1920, following the eating of a root of the same variety of plant that caused the poisoning in the non-fatal case just reported. In fact, the root was procured from the same section of the same field. The physician who attended the case has since died. However, the family described the symptoms, which were found to be typical of *Cicuta* poisoning.

The child ate the root about 4 P M. Convulsions began about two hours later and death occurred at 9 P M in severe convulsions. The cause of death on the death certificate is given as "eating wild parsnip." This could not possibly have been the cause of death as the wild parsnip is simply the common parsnip escaped from our gardens and is not poisonous. Moreover, the fibrous, single rootstock of parsnip, uncultivated, due to its woody formation, would be edible only by animals.

CASE 2 W R G, male, age fifteen,

Symposium: Arthritis

BLOOD CHANGES IN ARTHRITIS

RUSSELL L. CECIL, M D, *New York City*

*From the New York Hospital and the
Department of Medicine, Cornell University Medical College*

Arthritis is a term which may be applied to any inflammatory condition of the joints. It occurs in a number of different forms, depending on various etiologic agents. The diagnosis of arthritis is simple enough. It is often quite difficult however to determine the cause of the arthritis. The most important point for determination in any case of either acute or chronic arthritis is whether it is infectious or non-infectious in character. Once this point has been settled, a long step in advance will have been made in the handling of the case. Having established a diagnosis of arthritis, the physician should ask himself the following questions:

- 1 Is this an infectious arthritis?
- 2 If infectious, what is the organism?
- 3 If not an infection, what physical or chemical agent is responsible?

These differentiations are made by means of various clinical and laboratory findings. In the present discussion on arthritis I wish to limit myself to a consideration of certain changes which occur in the blood in the various forms of arthritis. It is surprising what a wide variety of reactions may take place in the blood of arthritic patients, and these reactions are of great value to the clinician in differential diagnosis.

As a guide to our discussion, let me refresh your memory with a simple classification of arthritis, a classification which is quite generally accepted now by students of this disease.

- 1 Infectious arthritis
 - A. Of known etiology, including arthritis caused by gonococcus, pneumococcus, tubercle bacillus, etc.
 - B. Of unknown etiology. The most important of this group are rheumatic fever and rheumatoid arthritis.
- 2 Degenerative arthritis, which includes various forms of osteoarthritis, such as Heberden's nodes, osteoarthritis of the hip, menopausal arthritis, etc.

- 3 Traumatic arthritis
- 4 Allergic arthritis, or serum sickness
- 5 Metabolic arthritis, the most important form of which is gout

Let us now take up in more detail these various types of arthritis, with special reference to the blood changes which may occur in each form.

Specific forms of infectious arthritis are usually secondary manifestations of a blood stream infection, the bacteremia resulting from some primary focus. In many of these cases the exciting micro-organism can be recovered not only from the joint fluid but from blood cultures as well. In many instances however the bacteremia is of a temporary character, and blood cultures may fail to yield the etiologic agent. When these specific joint infections are acute, the leukocytes are usually elevated, with an increase in the total polymorphonuclear count and in the percentage of immature cells. In the more chronic forms, such as those caused by the tubercle bacillus or the spirochete pallidum, the white count may show slight, if any, elevation, but even in chronic cases the Schilling count will usually show some shift to the left. An increase in the sedimentation rate of the red blood cells is also one of the usual findings in specific bacterial infections of the joints, and in general it may be said that the more active the infection, the higher will be the sedimentation rate.

A. Infectious arthritis of known etiology

1 Gonococcal arthritis. This is one of the commonest forms of specific infection of the joints and usually follows a gonococcal urethritis. During the acute stage the blood changes characteristic of active infection are present. The gonococcus may be recovered from the blood stream in severe cases, but in the average infection blood cultures are sterile. McEwen, Alexander, and Bunim¹ have recently reported the recovery of streptococci from the blood stream in fifteen per cent of patients with

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No information was at hand or available to judge the non-fatal cases of *Cicuta* poisoning, however, reports in the literature from other states usually give fairly numerous non-fatal cases in connection with the reporting of fatal cases. It has long been a saying or "grapevine report," indefinite and probably not always authentic, especially in the rural communities, that such and such a child died or was ill from eating "wild parsnips." How many of such reports are authentic we have no means of knowing.

Prevention

Education, especially of school children and others in sections where the plant is known to grow, as to the identification of the plant and its poisonous properties, both for men and domestic animals, is of the greatest importance.

Eradication. *Cicuta* should be hand-pulled, grubbed-out, and burned as soon as discovered.

Cicuta poisoning among domestic animals on farms of the middlewest and on the western cattle ranges are more or less common, so much so, that several exten-

sive studies, investigations, and reports have been made by State and Federal Agricultural Departments.

From a study of the literature, a considerable number of additional reports of poisonings have been elicited.

Anfin Egdahl,⁶ 1911, reported a case of poisoning due to eating *Cicuta maculata*, also, reported at that time forty-eight cases reviewed from the literature.

Stratton,⁷ of Denver, reported eleven cases with two deaths.

Gompertz,⁸ New Haven, reported seventeen cases in one group of boys. Though most of these were intensely ill, no fatalities occurred.

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Discussion

DR. PAUL BROOKS, *Albany*—Dr Haggerty's description of the experience with *Cicuta maculata* and his mention of the possibility of its being mistaken for horseradish reminds me of one of my own experiences when I was in practice. Several members of a family developed an acute gastroenteritis as a result of eating what was supposed to be horseradish, prepared from a root which had been dug by one of the family. They were able to produce a specimen of the root and it was identified by an expert as poke root. It did not smell or taste like horseradish and it was difficult to understand how fairly intelligent people, as these were, could make such a mistake. It shows how easily such mistakes can happen.

DR S W SAYER, *Gouverneur*—About twenty years ago, I was called to see a boy six years of age who had been suddenly seized with severe convulsions.

This boy lived with his parents on the bank of the Oswegatchie River. Along side of the houses ran a small brook and on each side of this brook and extending to the river bank was a marshy area.

Careful questioning and search of the house disclosed no drugs which might have

been taken by this boy. The illness developed very suddenly, falling a short distance to the ground in a convulsion, which continued, the intervals between them were so short that the child did not become entirely conscious so that we were unable to obtain any history whatever.

Within an hour, the temperature began to rise and the child died about 2½ hours after his first symptoms, which resembled those due to strychnine poisoning symptoms.

A spinal fluid was taken and was reported to be normal. It is my opinion that this case might have well been one of the *Cicuta maculata* poisoning.

DR. JOHN A. CONWAY—Dr Brooks' and Dr Sayer's report both help to confirm our belief that the extent of poisoning by *Cicuta maculata* is much more than we have been able to discover from a study of death certificates.

I recently have been informed by Dr Fred Graves, State Veterinarian in charge of milk, that he has personally seen cattle that were undoubtedly poisoned by this plant but at the time, did not recognize the condition. Dr Graves believes that many of these instances occur in cattle poisoning where the condition is not recognized.

that non-hemolytic streptococci are of etiological importance in rheumatic fever

Clawson and his coworkers¹⁵ tested the serum of rheumatic fever patients against two strains of streptococci, both of the viridans type, and found the agglutination titers of the serums distinctly higher than controls. Keefer, Myers, and Oppel¹⁶ found positive agglutination reactions against hemolytic streptococcus in twenty-six per cent of patients with rheumatic fever. Coburn and Pauli¹⁷ found agglutination responses in the sera of patients with rheumatic fever, but because of the low titer these authors felt that too much significance should not be attached to them.

Precipitin reactions Coburn and Pauli carried out precipitation tests with the serums of rheumatic fever patients against the protein fractions of streptococcus hemolyticus. Precipitins were demonstrable in the sera of ten patients with acute rheumatic fever, and the concentration of the precipitins became more marked as the activity of the process heightened. The precipitins disappeared with subsidence, and returned during recrudescence of the disease.

Schlesinger, Signy, and Payne¹⁸ found precipitins against various chemical fractions of the hemolytic streptococcus in about one-half of their rheumatic patients. They thought that the presence of precipitins was related to complicating streptococcal infection rather than to the rheumatism itself, for many patients with typical rheumatic symptoms but without a recent history of streptococcal infection failed to develop precipitins.

Hodge and Swift¹⁹ were not able to follow any constant relationship between the severity of rheumatic symptoms and the presence of precipitins against either the carbohydrate or the nucleoprotein fractions of the hemolytic streptococcus.

McEwen, Bunim, and Alexander²⁰ carried out precipitin reactions with the C-fraction of streptococcus hemolyticus and found that in thirty-nine patients with rheumatic fever, fifty-six per cent gave positive precipitin reactions. In thirty-two per cent the reaction was strongly positive. In normal controls twenty-four per cent were positive, but only five per cent strongly so.

Antihemolysins One of the most interesting immune responses observed in rheumatic fever is the development of antihemolysins in the patient's serum. Todd²¹ first called attention to this antihemolysin which is present in the blood serum and is capable of neutralizing the hemolytic substance formed *in vitro* by the streptococcus

hemolyticus. By following hemolytic streptococcus infections Todd found that this substance increases in amount in the blood serum during the active stage of the disease. Working on the theory that rheumatic fever was caused by the hemolytic streptococcus, Todd titrated the serums of patients with rheumatic fever for antihemolysins against the hemolysin of the streptococcus. He found that patients with symptoms of active rheumatic disease had a high antihemolysin titer, and that during the period of quiescence the titer fell almost to normal.

The observations of Todd have been abundantly confirmed by Coburn and Pauli. They found that the average antistreptocolysin titer for normal serum was seventy-one "units" whereas the average titer developed in acute rheumatism was 500 units. The onset of acute rheumatism coincided with a sharp rise in the antistreptocolysin titer. Streptococcus infections of the throat without rheumatic manifestations caused little or no rise in the amount of antistreptocolysin.

Myers and Keefer²² examined the serum of thirty-three cases of rheumatic fever and found the antistreptocolysin titer was higher than that for normal individuals, and that it was about the same as with cases of proven streptococcal infections.

Blair and Hallman²³ studied the sera of eighteen patients with rheumatic fever for their content of antihemolysins. Fifteen gave readings decidedly higher than the normal. The three patients whose readings were within the normal range were inactive at the time and were in the hospital because of cardiovascular disease.

McEwen and his coworkers obtained antistreptocolysin titers which were well above normal in sixty-six per cent of fifty-one patients with rheumatic fever. These investigators found that the antistreptocolysin readings above were limited almost entirely to patients with non-streptococcal diseases or active rheumatic fever.

Resistance to fibrinolytic activity of the hemolytic streptococcus Tillett and Garner²⁴ have recently demonstrated that broth cultures of the hemolytic streptococcus will rapidly liquefy the fibrin-clot of human plasma. Cultures of other bacteria fail to exhibit this property. Tillett, Edwards and Garner²⁵ found that the blood plasma of patients convalescent from acute hemolytic streptococcal infections was highly resistant to the action of hemolytic streptococcus cultures. This observation has been confirmed by other investigators. Myers, Keefer, and Holmes²⁶ confirmed these findings and further showed that the resist-

gonococcal arthritis. In nine per cent of these the organisms were of the hemolytic type. Blood cultures from one of McEwen's patients yielded both gonococci and hemolytic streptococci.

The works of Kristjansen and others² have shown that the gonococcus complement fixation test is of real diagnostic value in gonococcal arthritis. In our clinic we have come to look upon this test as of the greatest importance, and we should be loath to make a diagnosis of gonococcal arthritis in the face of a negative complement fixation test. Keefer, Myers, and Holmes³ obtained a positive complement fixation reaction on the blood serum in eighty to eighty-six per cent of patients with gonococcal arthritis. In cases in which the reaction was negative the genital infection had usually been present for less than two weeks.

2 Infectious arthritis caused by the ordinary pyogenic cocci is usually, but not always, monarticular and is often spoken of as a surgical joint, or suppurative arthritis. As a matter of fact, many of these joints fail to progress to the stage of suppuration. The joint fluid however, even if not purulent, is usually cloudy, due to the presence of leukocytes and desquamated endothelial cells. Blood cultures are frequently positive in this form of arthritis. The organisms which may be recovered are pneumococcus, streptococcus, staphylococcus, or meningococcus. The usual leukocytic reactions are present, and the sedimentation rate is high.

3 The tubercle bacillus and the spirochete pallidum usually produce a chronic form of arthritis. The blood changes in tuberculous arthritis are not noteworthy. In syphilitic arthritis a positive Wassermann reaction will be obtained in practically one hundred per cent of the cases.

B. Infectious arthritis of unknown etiology

Rheumatic fever should still be listed as a disease of unknown etiology though the evidence in favor of a streptococcal origin is becoming more convincing every year.

One of the most striking features of rheumatic fever is the secondary anemia which nearly always develops in patients who have a prolonged attack of the disease. Both the hemoglobin and the red cell count are reduced considerably. During the febrile stage when the joints are acutely inflamed there is a leukocytosis of from 15,000 to 25,000, which slowly decreases with the diminution of symptoms. In the monocyclic form the count returns to normal after a few weeks and remains so. In the polyyclic and continuous forms a low-grade

leukocytosis may continue over a considerable period of time. Hand in hand with the leukocytosis goes an elevation in the sedimentation rate. The leukocytes and the sedimentation rate provide a fairly accurate gauge to the patient's progress, and failure to return to normal even when the fever and joint symptoms have entirely disappeared is highly suggestive of continued activity of the rheumatic process. These tests are particularly valuable in cases of rheumatic carditis where it is difficult to know just when the activity of the lesion in the heart has terminated, and may be of considerable aid in deciding when bed-rest can be terminated.

Blood cultures. For thirty years or more a lively controversy has been carried on by bacteriologists concerning the presence and significance of streptococci in the blood stream of rheumatic fever patients. Time does not permit an extensive review of this interesting subject. On the positive side are the studies of Poynton and Paine,⁴ Rose-now,⁵ Clawson,⁶ and our own investigations at Bellevue Hospital.⁷ On the negative side are the studies of Lazarus-Barlow,⁸ Nye and Seegal,⁹ Cooley,¹⁰ and Kinsella and Swift.¹¹ To make the subject still more confusing, a third group has recently appeared who recover streptococci in the blood not only in rheumatic fever but in many other conditions as well. The more important of these reports are those by Callow,¹² Wilson and Edmond,¹³ and McEwen, Alexander, and Bunim. The percentage of positive cultures reported from rheumatic patients has varied all the way from ten to sixty-five per cent, and the type of streptococcus most frequently found has been the "viridans", though indifferent and hemolytic types have also been recovered. McEwen and his coworkers recovered streptococci from the blood stream in sixty-one per cent of patients with acute tonsillitis, an interesting finding when one recalls how frequently rheumatic fever is preceded by acute infection of the tonsils.

Agglutination reactions. Nicholls and Stainsby¹⁴ carried out agglutination reactions with serums of patients with rheumatic fever against a non-hemolytic streptococcus of the viridans variety, which had been originally isolated from the blood of a patient with rheumatic fever. The agglutination test showed that the serums of most rheumatic fever patients contained considerable amounts of specific agglutinin for this strain, while control serums possessed little or no agglutinative power for this organism. In the opinion of Nicholls and Stainsby the results of these agglutination reactions furnish additional evidence

any reference to the type of arthritis under consideration. The writer, in collaboration with Nicholls and Stainsby,³³ reported the isolation of streptococci from the blood stream in 62.3 per cent of 154 cases of rheumatoid arthritis. Most of the strains recovered in this series were attenuated hemolytic streptococci. This study awakened considerable interest in the bacteriology of rheumatoid arthritis, and since its appearance a number of studies have appeared along similar lines, some confirming and some failing to confirm these observations. Space does not permit a complete review of this rather voluminous literature. The studies of Rosenow,³⁶ Gray, Fendrick, and Gowen,³⁷ Wetherby and Clawson,³⁸ and Ashworth,³⁹ confirm the findings of Cecil Nicholls, and Stainsby, whereas Nye and Wixelbaum,⁴⁰ Bernhardt and Hench,⁴¹ Dawson, Olmstead, and Boots,⁴² and Wainwright⁴³ fail to confirm our findings. Dawson, Olmstead, and Boots implied that the technic which had been employed in our blood culture studies invited contamination, and they suspected that the organisms which had been recovered by us and by other bacteriologists were contaminants from the air or the skin. More recent studies however have supported our contention that these streptococci are actually present in the blood stream. For example, McEwen and his coworkers found streptococci present in seventeen per cent of patients with rheumatoid arthritis, but they obtained a slightly higher percentage of positive streptococcal cultures in senescent nonfebrile states and in acute tonsillitis. Even normal healthy controls yielded streptococci in five per cent of the cases. McEwen believes that the streptococci are actually present in the blood stream, but questions their significance in view of the fact that they are found not infrequently in non-arthritic bloods.

Streptococcal agglutinins. One of the most interesting phenomena observed in the serum of patients with rheumatoid arthritis is the presence of streptococcal agglutinins. These agglutinins were first described by Cecil, Nicholls, and Stainsby in 1931, who showed that most of their "typical strains" of attenuated hemolytic streptococci were agglutinated by the serum of rheumatoid patients. In a series of 153 cases of rheumatoid arthritis, ninety-seven per cent showed agglutination with "typical strains" of streptococci at a dilution of 640 or higher, while in a series of fifty normal controls, the serum in every case failed to give a strong agglutination reaction. Of 102 pathological controls only two patients gave a positive reading at a dilution of

640 or higher. These investigators also observed that hemolytic streptococci from other sources such as scarlet fever and erysipelas were often agglutinable by arthritic serum. Dawson, Olmstead, and Boots confirmed the presence of these streptococcal agglutinins in the serums of patients with rheumatoid arthritis, obtaining positive readings in sixty-seven per cent of their cases. They also found that hemolytic streptococci from other sources were often agglutinated by the serum of rheumatoid patients. The presence of these agglutinins in rheumatoid serums has now been corroborated by a number of investigators, including Gray, Fendrick and Gowen, Wetherby and Clawson, Kiefer, Myers, and Oppe, Wainwright Cox, and Hill⁴⁴ and Blair and Hallman. The last mentioned authors found agglutinins in high titer in eighty-five per cent of their patients.

Nicholls and Stainsby found that in patients with advanced arthritis the agglutination titer was higher than in those with less involvement. On the other hand, they felt that the actual duration of the disease and the age of the patient had very little influence on the strength of the agglutination reaction. Their opinion is supported by the recent study of Blair and Hallman who found no relation between the agglutination titer and the age of the patient, duration of the disease, or the number of joints involved. In our experience the agglutination reaction has not run closely parallel with the sedimentation rate. However, it may be stated that as a general rule patients with a high sedimentation rate show strong agglutination reactions and vice versa. As recovery takes place the agglutinins tend to diminish and eventually to disappear, but they are not so sensitive a guide to the condition of the patient as is the sedimentation rate.

Precipitins. Dawson, Olmstead, and Jost⁴⁵ studied the precipitin content in the serums of seventy-one cases of rheumatoid arthritis. Thirty-eight gave positive or doubtful reactions with the carbohydrate and nucleoprotein fractions of streptococcus hemolyticus. In the same series of cases thirty-four of the seventy-one gave positive or doubtful agglutination reactions with the streptococcus hemolyticus. These investigators found that all sera which showed high agglutination titers gave positive precipitin reactions. They conclude that there is a close approximation in the ability of rheumatoid sera to agglutinate streptococcus hemolyticus and to precipitate the various group-specific fractions of this organism. They further concluded that these findings offered suggestive evidence in

ance to fibrinolysins of the plasma of patients with rheumatic fever is comparable to that of patients with erysipelas and other acute streptococcal infections. Similar results have recently been reported by McEwen, Bunim, and Alexander.

Summary 1 In rheumatic fever we have the blood reactions which characterize any acute or subacute infection.

2 In a certain percentage of cases (the percentage differing in different laboratories), streptococci of various types are recovered from the blood stream of rheumatic fever patients.

3 With respect to immune responses in the blood, specific streptococcal agglutinins and precipitins have been demonstrated by various observers. More recently antihemolysins against the hemolysin of the streptococcus hemolyticus have been demonstrated in the serums of rheumatic fever patients, and still more recently it has been shown that the blood plasma of patients convalescent from rheumatic fever is highly resistant to the fibrinolytic activity of hemolytic streptococcal cultures.

We have evidence therefore from various reactions in the blood that rheumatic fever is not only an infectious disease, but that in all probability it is related to streptococcal infection. Much of the evidence points toward the hemolytic streptococcus as the exciting agent, but the possibility of the non-hemolytic streptococcus being implicated can not be dismissed.

Rheumatoid Arthritis

More than one writer on rheumatic disease has pointed out the close similarity between rheumatic fever and rheumatoid arthritis. Although it does not seem likely that the two diseases are identical, there are many reasons for believing that they must be rather closely related etiologically. These diseases have many clinical features in common, and when one reviews the blood changes which occur in rheumatoid arthritis, one can not fail to be impressed with their similarity to those just described as occurring in rheumatic fever.

Changes in blood count Secondary anemia is just as common in rheumatoid arthritis as it is in rheumatic fever. Both the hemoglobin and the red cell count are often markedly reduced. The leukocyte count may show some elevation, particularly in active cases, but the counts do not run so high as they do in rheumatic fever. The percentage of immature cells is frequently elevated even in cases where the total white cell count shows no elevation. The author noted a shift to the left in nineteen of

twenty-eight cases (67.8 per cent). In some of these, the percentage of immature cells was three to four times the normal. Eaton reported an increase of the immature cells in eighty per cent of 250 patients with chronic arthritis (type of arthritis not specified). Steinbrocker and Hartung claim that in their investigations one hundred per cent of patients with rheumatoid arthritis showed an elevation in the immature cells. My personal opinion, however, is that this estimate is too high.

Sedimentation rate of the red blood cells A number of studies have appeared in the last few years on the sedimentation rate in rheumatoid arthritis. The more important have been those of Race,²⁷ Dawson, Sia, and Boots,²⁸ Kahlmeter,²⁹ and Forestier.³⁰ In the author's series of fifty-two cases the average sedimentation rate for patients with rheumatoid arthritis was three times the upper limit of normal. The sedimentation rate is not only of diagnostic value in separating arthritis of the infectious types from traumatic and degenerative forms of arthritis, but it possesses considerable value as a prognostic test. In most arthritis clinics, the sedimentation rate is determined every three to four months in order to gauge the value of the treatment employed.

Snapper and others³¹ have shown that the power of the red blood cells to settle at various rates is dependent on three factors, namely, the cell volume, plasma fibrinogen, and plasma globulin. When these three constituents are normal, the sedimentation rate can be calculated with a fair degree of accuracy. Rubinstein and Fisher,³² Hurwitz and Meyer,³³ and others have shown that there is not only a rise in the plasma globulin but a fall in plasma albumin in certain febrile diseases, especially in pneumonia. Davis³⁴ has made use of these factors in an interesting way by studying the plasma proteins in rheumatoid arthritis. He found that in rheumatoid arthritis there was a rise in the plasma globulin and a fall in the plasma albumin similar to that observed in various infectious diseases. Davis believes that his findings suggest the infectious nature of rheumatoid arthritis.

Blood cultures I have already indicated in the discussion on rheumatic fever that a sharp controversy still exists among bacteriologists as to the presence or absence of streptococci in the blood stream of rheumatic patients. A similar argument has been going on for the past ten years concerning the bacteriology of the blood in rheumatoid arthritis. Even before the last decade there had been a few reports on the finding of streptococci in the blood of patients with chronic arthritis, but without

In a series of cases which the writer investigated several years ago, thirty-one cases of osteoarthritis showed an average sedimentation rate only slightly above the normal limit. This is so regularly the case that when the sedimentation rate is high one should suspect the presence of some infectious element. Investigators are very much in agreement that the streptococcal immune reactions which have been described under rheumatic fever and rheumatoid arthritis are conspicuously absent in the hypertrophic forms. Nicholls and Stainsby studied the serums of forty-four cases of osteoarthritis. Only six of them showed any agglutinins at all, and these were all at a dilution of 1:80 or less. McEwen examined the serums of forty-six cases of osteoarthritis and found no evidence of streptococcal agglutinins in a single case. Dawson, Olmstead, and Boots obtained negative agglutinins in seven cases of osteoarthritis. McEwen and his coworkers obtained positive precipitin reactions in a few cases of osteoarthritis, but the reactions were nowhere nearly so strong as those obtained in rheumatic fever and rheumatoid arthritis. Several investigators agree that antistreptococcal and the antifibrinolysins are absent in the serums of patients with hypertrophic arthritis.

The blood chemistry of osteoarthritis is not noteworthy. A certain number of these patients will show a high blood sugar, but this finding is not unusual in any group of middle-aged patients. Bauer, Bennett, and Short have recently studied the blood chemistry in cases of hypertrophic arthritis and found no significant changes in the serum calcium or phosphorus, or in the blood sugar, urea or creatinine. Bruger and Poindexter⁴⁹ found that the plasma cholesterol was higher in hypertrophic arthritis than it was in atrophic arthritis. Hartung and his coworkers found the mean cholesterol content of the plasma to be above normal in fifty-nine cases of osteoarthritis, and felt that this finding could not be explained on the basis of either senescence or obesity.

Osteoarthritis then can be sharply differentiated from the various forms of infectious arthritis by the absence of the blood changes characteristic of infections, and of streptococcal infections in particular.

Traumatic arthritis

Traumatic arthritis is usually nothing more than a sprain, and tends to heal very rapidly unless complicated by a fracture of one of the articulating surfaces. It should be remembered however that trauma to a joint may be the predisposing factor to a genuine arthritis, which may be infectious, degenerative, or even gouty in character.

Allergic arthritis

Allergic arthritis or serum sickness is an acute condition and usually clears up spontaneously. There may be a slight leukocytosis, but this is temporary in character.

Gout

Gout is a disease of metabolism. The metabolic disturbance has to do with the oxidation and elimination of purins. The salts of uric acid accumulate in the blood, and under certain conditions are deposited in the tissue about the joint. The most constant of the blood changes in gout is an increase of uric acid in the circulating blood. The amount of uric acid in one hundred c.c. of normal blood varies between 2 and 3.5 mgs.

McClure and Pratt,⁵⁰ employing the method of Folin and Denis,⁵¹ found that in normal individuals the blood contains less than three mgs. of uric acid per one hundred c.c. In seven gouty patients the blood uric acid varied from 3.3 mgs. to 5.8 mgs. per one hundred c.c. of blood. No relation was found between the amount of uric acid and the nitrogenous substances in the blood. Hopkins and Wolf⁵² claim that the normal amount of uric acid varies from 2 to 3.5 mgs. and that in gout four to ten mgs. may be obtained. Pratt⁵³ found the uric acid was notably increased in gouty patients in the intervals as well as during the acute attacks. In Pratt's series of twenty-one cases of genuine gout, the average amount of uric acid in the blood was 3.7 mgs. per one hundred grams of blood. All students of gout admit however that in a few cases of undoubted gout the uric acid in the blood may be found within normal limits, but even in these cases when the patient is on a purin-free diet it never drops below 1.5 mgs.

Most modern chemists make use of

favor of the hypothesis that rheumatoid arthritis is associated with infection by streptococcus hemolyticus

Antihemolysins In our discussion of rheumatic fever it was noted that antihemolysins appeared in the sera of a high percentage of patients with active rheumatic fever. Investigators have naturally been curious to know if these anti-bodies were also present in the sera of rheumatoid arthritis patients. Myers and Kiefer studied the serum in thirteen cases of rheumatoid arthritis and found that the disease was not accompanied by an increase of the antistreptolysin titer of the blood serum. McEwen and his coworkers noted high readings of antistreptocolysin in the sera of only a few cases of rheumatoid arthritis. On the other hand, Blair and Hallman investigated forty-five patients with rheumatoid arthritis and found antistreptocolysin present in titers definitely above normal in one-third of the sera. Furthermore, these high titers with one exception accompanied high agglutination titers. Blair and Hallman conclude that the presence of streptococcal agglutinins and antistreptocolysins in the sera of patients with rheumatoid arthritis suggests an association of this organism with the disease.

Antifibrinolysins As noted under rheumatic fever, the fibrin clots from practically all patients with acute hemolytic streptococcus infection show increased resistance to fibrinolysis by hemolytic streptococcus cultures. Similar resistance to fibrinolytic action was observed in the fibrin clots of patients with rheumatic fever. Myers, Kiefer, and Holmes have applied this test to a number of patients with rheumatoid arthritis. The findings were similar to those in normal controls, with a few exceptions in which the clots showed high resistance to fibrinolysis. McEwen and his coworkers have reported results quite similar to those of Myers, Kiefer, and Holmes.

Just why these differences in streptococcal immune reactions should exist between rheumatic fever and rheumatoid arthritis we are unable to say at the present time. It is obvious that the discovery of these serological changes may have considerable significance as regards the etiology of both diseases. It can not be stated as yet just how much practical value such reactions have in the differential diagnosis of arthritis. In the opinion of the writer however the streptococcus agglutination reaction has distinct value in the identification of rheumatoid arthritis. Streptococcal agglutinins are present in a high percentage (approximately ninety per cent) of these patients. From the recently published studies of Co-

burn, I think it is fair to say that the antistreptocolysin reaction could be employed with value in the diagnosis of rheumatic fever. These tests are all very new and it will take time to determine their full biological significance and clinical value.

Chemical changes in the blood Patients with rheumatoid arthritis show no characteristic changes in their blood chemistry. In a certain percentage of cases the blood uric acid may be elevated but rarely to a point where one would suspect gout. Pemberton⁴⁶ and his associates claimed that the blood sugar was often elevated in rheumatoid arthritis and that these patients had a poor sugar tolerance. These observations however have been questioned by several investigators. No important changes in serum calcium or serum phosphorus, or in calcium and phosphorus metabolism were discovered by Bauer, Bennett, and Short⁴⁷ in patients with rheumatoid arthritis. Hartung and his coworkers⁴⁸ have recently shown that the mean cholesterol content of the plasma is lower than the normal in rheumatoid arthritis, and they believe that this finding supports the infectious theory of its etiology.

Summarizing the various serological reactions which occur in rheumatic fever and rheumatoid arthritis, we may say that the agglutinins and precipitins tend to parallel each other while the antistreptocolysins and the anti-fibrinolysins are roughly parallel. It is interesting to note that agglutination and precipitin reactions with the hemolytic streptococcus are strongly marked in rheumatoid arthritis but weak or absent in rheumatic fever, whereas antistreptolysins and antifibrinolysins are usually present in rheumatic fever but absent or weakly positive in rheumatoid arthritis.

Osteoarthritis

Osteoarthritis is a degenerative process akin to other phases of senility and in this respect presents a strong contrast to infectious arthritis which is inflammatory in nature. One would naturally infer that the reactions of inflammation would be absent in osteoarthritis, and such indeed proves to be the case. The leukocyte count is within normal range. Secondary anemia is rarely noted. The sedimentation rate is normal or slightly elevated. Forestier noted that in fifty-five cases of osteoarthritis sixty-two per cent showed a normal sedimentation rate and in twenty-eight per cent the rate was slightly elevated, there was only one with a rate as high as twenty mm.

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USE OF HEAT IN THE CARE OF THE ARTHRITIC PATIENT

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For the past two years we have attempted to work out a practical standardized method of treatment using heat alone in a group of twenty patients hopelessly crippled with advanced infectious arthritis in a constant state of exacerbation. The patients were in varying subacute stages of the disease after bouts (months) of lowgrade fever, still suffering severe pain, swelling, and almost complete disability. These patients had been treated previously by many of the different procedures suggested for arthritis without lasting effect. All of these patients have been relieved of their acute and progressive symptoms and the majority (70%) have shown an increase in calcium deposits radiographically in their bones and at the joint surfaces.

Our routine was to have them eat a general diet plus one quart of milk per day, have them wear heavy woollens to avoid being chilled, and then give no

medication other than aspirin for pain. Heat in various forms was tried in an effort to find first the most effective and later the most economical and practical method of holding this disease in check.

It was our purpose to evaluate the effects of the hot bath routine alone (described below), prolonged local treatments with diathermy (3-8 hours a day) two or three times a week through the effected joints, and a combination of the hot bath and local diathermy treatments and hot soaks.

The etiological factor or factors in infectious arthritis are as yet unknown, but in our opinion and for reasons as yet unknown, the opportunity for recurrence of the symptoms once the disease has started is ever present in this geographic region. In other words, once an arthritic, the patient is always an arthritic—the variation being only in the quiescence or activity of the disease. With this postulate

Folin's improved method for the determination of uric acid in the blood. This method was published in the *Journal of Biological Chemistry* in March 1930.

Spondylitis

So far nothing has been said about the value of blood tests in the differential diagnosis of spondylitis. The two important types of spondylitis are the infectious form, often referred to as the Marie Struempell spine, and hypertrophic spondylitis, or osteoarthritis of the spine. The infectious form of spondylitis is often associated with rheumatoid arthritis. When it occurs alone as the so-called "poker spine" in young men, the blood will show the reactions characteristic of infection, but the streptococcal agglutination reaction is usually negative. This suggests of course that spondylitis deformans is not always referable to the streptococcus, and this would fit in with our clinical observations, for one sometimes sees this form of arthritis coming on after gonorrhea or even after typhoid fever. In osteoarthritis of the spine the blood reactions differ in no respect from those seen in hypertrophic arthritis elsewhere in the body. In other words, no noteworthy blood changes are observed.

Discussion

The five types of arthritis which are seen most frequently in clinics and private practice are gonococcal arthritis, rheumatic fever, rheumatoid arthritis, osteoarthritis, and gout. Some may raise the question as to whether gout should be included in this group, but certainly in private practice in New York city gout is a fairly common disease. We have seen from the preceding remarks that, with the exception of osteoarthritis, there are fairly reliable blood tests for each of these forms of arthritis, namely, the complement fixation test for gonorrheal arthritis, the antistreptocolysin test for rheumatic fever, the agglutination reaction for rheumatoid arthritis, and the blood uric

acid determination for gout. The least dependable of these tests is the antistreptocolysin determination in rheumatic fever. The other three tests can be considered fairly reliable and practical in their clinical application. Not nearly enough use is being made of the streptococcus agglutination reaction in the diagnosis of rheumatoid arthritis. The writer has found this test of great practical value in differential diagnosis. Nor should we lose sight of the theoretical significance of this reaction in further study of the etiology of rheumatoid arthritis. It seems fairly certain that streptococci of various types can be recovered not infrequently from the blood of patients with various acute infections and chronic constitutional disorders. In most instances they probably have little or no significance. In rheumatoid arthritis however, streptococci can frequently be recovered from the blood, and positive streptococcus agglutination and precipitation reactions can be obtained in a high percentage of patients with the disease. These findings would certainly suggest that in rheumatoid arthritis the streptococci were more than accidental or harmless travellers in the patient's blood.

Conclusions

In the commoner forms of arthritis the differential diagnosis can usually be made by careful studies of the blood. Infectious arthritis can be differentiated from the non-infectious forms by means of the leukocyte count, the Schilling hemogram, and the sedimentation rate of the red blood cells. In the differentiation of the prevalent infectious types, other blood examinations have proven useful. The more important of these are the complement fixation test for gonococcal arthritis, the streptococcal agglutination reaction for rheumatoid arthritis, and the antihemolysin test for rheumatic fever. The identification of gout can usually be achieved by determining the uric acid content of the blood.

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relieved over a long period of time following a single artificial fever at 40.5° C maintained for four hours. After having had one fever treatment, three cases with mixed arthritis have gone almost three years without recurrence of symptoms. Fever therapy as a hospital procedure probably has its most effective use in stopping the acute phases of the exacerbation of symptoms even if it does not prevent later exacerbations from occurring.

In the absence of facilities for administering fever therapy, the most potent weapon is the hot bath when used as a modified fever treatment. This can be used routinely by the patient throughout the cold weather period. The arthritic process in a great many patients of the older group can be kept quiescent by this procedure when kept up regularly three times a week or occasionally as often as three times a day, or enough to relieve symptoms of acute exacerbation. The directions for this are very simple, and, when supervised by a physician, are, in the average case, devoid of danger. The two major contraindications for the use of the baths in this manner are severe myocardial insufficiency and advanced vascular disease, although a restricted use under careful supervision might be practical since the duration of the bath at best is short (15–20 minutes). Age (68 to 75 years) is no contraindication. The important features about the hot bath routine are the elevation of the mouth temperature to 101° F as measured by a thermometer and the regularity with which it is kept up for indefinite periods, especially throughout the cold part of the year. In this climate this means for about eight months. The general lack of risk from the short hot bath, its low cost and simplicity has made this bath routine very successful as a procedure in the home. In fact its effect has been just as pronounced as the single general fever therapy where the temperature is raised to 40.5° C (or 104.5° F) and maintained at this level for various periods of hours. Raising the mouth temperature above 101° F in the bath is apt to be followed by faintness, weakness, and prostration, and is not well-tolerated by the patient. The patient should be warned that this is dangerous.

With both treatments, there is an immediate subsidence of symptoms. With the general fever treatment this may last a week or ten days, following which the symptoms may recur although gradually diminishing over the following four to six weeks. In favorable cases they may disappear sometimes for months. The patient usually gains from ten to fifteen pounds in weight and feels rejuvenated.

Over the same period of time (4–6 weeks) the same gradual subsidence of symptoms occurs with the hot bath routine although the patient should expect the symptoms to recur each morning. This is alleviated somewhat by starting the day with a hot shower. The same gain in weight and the same influx of energy is noted. Herpetic lesions of the face occur with as great frequency after the hot bath routine as with the fever treatment.

Certain cases will need no further therapeutic procedures, but the patient should be kept on the hot bath routine (2–3 times a week) just the same for the rest of the cold weather, and whenever cold extremities or stiffness develop the patient should warm himself immediately by a hot soak, hot shower, bath, or any other practical method. Others following the development of an acute respiratory infection or some other unknown factor will have an exacerbation of their symptoms. If severe, this is best handled by putting the patient to bed, and continuing the hot bath routine daily until the symptoms subside. Or if the exacerbation is severe enough to necessitate its immediate cessation, the patient may be given a general fever treatment in the hospital.

If one or several joints are particularly slow in responding the application of additional heat to these joints seems to speed up the repair process. This can be applied in several ways—the most economical being the use at home of heat upon the joint for two or more periods each day of not less than one hour and preferably for two hours or more. This is accomplished most simply by using a twenty or forty watt ordinary electric light bulb at a comfortable distance from the skin over the joint (2–4 inches). The heating should be gentle and prolonged and ought not to produce an erythema.

TREATMENT OF ARTHRITIS, WITH PARTICULAR REFERENCE
TO VACCINES AND ALLERGIC REACTIONSCHARLES H. HITCHCOCK, M.D., *Syracuse*

Two years ago I presented a paper before this body upon the treatment of infectious or "rheumatoid" arthritis with hemolytic streptococcus vaccine. At that time reference was made to the state of streptococcal allergy which exists in this disease and in rheumatic fever, and certain experimental observations were described which led to the choice of the intravenous route for administration. It was pointed out that in the majority of cases, following proper surgical control of infected foci, the judicious administration of vaccine intravenously is followed by distinct amelioration of symptoms. It was emphasized that prolonged courses of treatment are necessary in order to obtain good results. In the discussion, Dr. Rawls reported a high percentage of successes in patients thus treated with vaccines selected according to certain criteria which he had evolved. Such vaccine treatment is, in effect, an attempt at lessening the degree of sensitivity which these patients exhibit toward streptococcal products—that is, a more or less successful desensitization. Reports from different parts of the country have confirmed the value of the procedure, although strains and dosages employed have varied considerably. Particularly in the matter of dosage wide discrepancies have appeared, which it is not within the scope of this paper to discuss. The fact remains, however, that successful results have been reported by both large and small dose advocates.

I should like to discuss here the failures—the unfortunate minority to whom this treatment fails to be of value, in whom, in fact, it may lead to intensification of the disease, and may even be followed by a spread to previously uninvolved joints. Such cases seldom find their way into statistical reports, except to be grouped in the column of "unimproved" and there abandoned. This does not, however, dispose of their arthritis, and many of them wander from clinic to clinic, vainly seeking relief. Possibly the man who is particularly interested in the arthritis problem is blessed with an undue

percentage of them. Not all can be helped, at present, however, with careful study some amelioration can be obtained in many.

During the past two years several such patients have been encountered, all with obstinately persisting arthritis, and all intolerant to streptococcus vaccine. In all of them, clinical sinusitis from staphylococcal infection has been found. Despite adequate treatment of the infected sinuses, no improvement has resulted, nor has there been a lessening of the intolerance to streptococci. Some have been submitted to intensive treatment with autogenous staphylococcus vaccine, but no benefit has resulted. During these attempts at therapy, considerable sensitivity to the vaccine has been observed, for an overdose will produce reactions, sometimes of several days' duration. In no case, however, have such reactions resulted in a permanent intensification of the arthritis, or in a spread of the process to fresh joints. That such patients, infected by staphylococci and sensitive to this organism and its products should also be highly allergic to hemolytic streptococci is to be fully expected from certain experimental results in laboratory animals, and is by no means an argument that the process was initiated originally by streptococci. For example:

A woman of thirty-five suffered for two years from a mild but annoying multiple arthritis which persisted in spite of removal of obvious dental and tonsillar foci. It was found that she harbored a staphylococcal infection of the right sphenoid sinus. Adequate drainage was secured and maintained, and over a period of several months she was treated with small intravenous doses of hemolytic streptococci, without improvement. In fact the only apparent effect of the vaccination was to induce reactions, increase the arthritic discomfort and increase the amount of sinus discharge. Autogenous staphylococcus vaccine was then administered for several months more, without result. It was then determined to try the effect of combining injections of staphylococcus toxoid with the vaccine. The first few treatments revealed the presence of a high degree of sensitivity to the toxoid.

This is most readily applied through the use of a flexible goose-neck type of student reading lamp with a metal shade. Such a lamp (20 watt bulb) may be put in the bed beside the patient with safety. This is much more efficient than a heating pad. Any other convenient source of heat may be utilized at the discretion of the physician.

Diathermy of one kind or another has been in use for a long time for the treatment of painful joints, but the effectiveness of such treatment is enhanced very materially by prolonging the treatment for periods of from two to eight hours, with short rest periods of five to ten minutes every two to three hours. Such treatments undertaken one to three times a week for a month will often be sufficient and are far more effective than twenty to forty minute treatments three to five times a week over the same period. The main objection is that one patient ties up a single machine for such a long time.

If the patient does not have a bath tub or electricity in the home, the problem of caring for the disease is very greatly increased, and one must then rely upon the non-specific methods of producing fever or "shock" by foreign proteins and various other types of medication.² With the use of these agents, as well as in the use of stock vaccines, the same lag of from four to six weeks seems to occur before the relief of symptoms is obtained, although in some cases, as with the hot

baths or with fever therapy, the relief is immediate and prolonged.

Conclusion

The proper use of heat (hot bath routine and local treatment) consistently and over a long period of time is very effective in the control of the symptoms of infectious arthritis. A good part of the use of this therapeutic agent can be done by the trained patient, supplemented from time to time if necessary, by additional and more intensive application of heat by the physician. Until a more specific therapeutic agent is found, this represents a simple and safe, and in general an effective type of therapy. We believe that there is no short cut to the long drawn-out use of heat in these patients. First of all, the patient should be put in the best physical condition by the removal of all foci and the relief of all other loads upon his body systems. The hazard of respiratory infection should be reduced as much as possible. He should keep warm, and never allow himself to become fatigued. Heat in the most practical form should be used without restriction for the alleviation of his symptoms. In fact, the patient must almost make his life over to conserve and supplement his normal body heat mechanisms.

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Discussion

DR. K. G. HANSSON, *New York City* — The physiological action of heat is (1) increase of body temperature, (2) hyperemia, (3) increase of respiration and circulation, (4) a sedative action on the nervous system, (5) relaxation of muscles, (6) increase of cell metabolism, and (7) a change in the reaction of the body fluids from an acid to an alkaline reaction. The type of heat is of subjective value.

In rheumatoid arthritis, where we usually deal with a patient who is below par in general health, with muscular atrophy, heat can be used generally for its tonic effect, and locally for its sedative action.

In osteoarthritis, which is often accompanied by overweight, heat can be used generally for reducing, as in an electric cabinet, and also locally on the joints. In-

ternal heat in the form of diathermy, short-wave, or ultra-short-wave, are very useful. The painful fingers can be successfully treated by paraffin dips.

Specific arthritis, I believe, is where hyperpyrexia, or artificial fever treatments belong. My experience with hyperpyrexia in other forms of arthritis, has been discouraging. A series of cases of rheumatoid arthritis that I treated with hyperpyrexia, showed only temporary relief, and the sedimentation rate was not affected (*Journal of Bone and Joint Surgery*, Jan 1934).

Heat will always be a part of the management of arthritis, but it should be used with discrimination as to dosage and time, and specific instruction should be given to the patient, if the maximum benefit is to be obtained.

gunning in the fall of the year, he was given intravenously a long course of autogenous vaccine. It was quickly found that fifty-five diplococci reproduced his symptoms with great regularity, whereas forty were well-tolerated. During the winter his sinus activity died down, and later the usual vernal arthritis failed to materialize. However, two months after its expected onset he developed a serious nasal furuncle, and ten days later suffered a moderately severe arthritic bout. During the summer, arthritic symptoms recurred from time to time in association with a rather annoying furunculosis. Under treatment with vaccine and toxoid, both furunculosis and arthritis rapidly improved.

It was observed that, in spite of his great sensitivity to pneumococci, his tolerance for staphylococcal products was rather high. However, it would be unwise to state that the rapid improvement under combined staphylococcus therapy was corollary to the initially low degree of sensitization.

Multiple foci must not be overlooked. The fact that tonsils and teeth have, as usual, been removed does not mean, for example, that the prostate is still normal, or may not even have been the main focus. In one patient a diseased gall-bladder was first suspected through the observation that slight overdosage of vaccine resulted not only in mild increase in arthritic manifestations, but also in short bouts of postprandial distress and flatulence. This patient, incidentally, had previously undergone a tonsillectomy with considerable temporary relief. This tendency of vaccine to cause clinical recurrences in sensitizing foci, while not recommended as a routine means for their detection, is at times of value. For example

A man of forty, who had suffered for eleven years from arthritis of the spine, came for treatment because the process was spreading into the shoulders and knees. All obvious foci had been removed. He gave a story of irritable bowel of twelve years' duration. Stool culture yielded beta-hemolytic streptococci in large numbers. Under intravenous vaccination with the autogenous strain, slow improvement set in. After two months of treatment, a sudden loss of tolerance occurred, manifested by severe reactions after two successive treatments, the second of which consisted of only one-fifth of his usual dose. He was sent to a rhinol-

ogist, who shrank his nasal mucosa thoroughly, and reported absence of clinical sinus infection. Nevertheless, following the examination, the symptoms immediately lessened, and his tolerance was restored.

As a matter of fact, some nasal infection was present, for not only were many staphylococci grown from his sinus ostia, but during the months of March and April treatment was considerably hampered by recrudescence of the infection in the form of a rather obstinate congestive reaction.

Not only may more than one focus be present, but, in addition to grampositive cocci, other organisms may play a part. For example

A girl of twenty-five suffered for three years from slowly progressive arthritis of ankles and knees. She harbored a cervicitis, without other detectable pelvic involvement, and the blood serum gave a positive complement fixation reaction with gonococcal antigen. The cervix was cauterized. Treatment was started with Corbus-Ferry filtrate, with little success. Rhinological examination then revealed bilateral cystic middle turbinates, which were eventually removed. A profuse discharge, laden with staphylococci, appeared from the ethmoid areas. Treatment consisted in alternating injections of Corbus-Ferry filtrate and staphylococcal toxoid, together with the necessary intranasal manipulations. Furthermore, a definite tendency for the joint manifestations to be worse before and during the menstrual period was apparently influenced by the use of prolan for the control of severe dysmenorrhea associated with scanty and irregular menstruation. Under this regime she has steadily improved, to the point where she has been able to resume an occupation which keeps her upon her feet much of the day. Upon several occasions one or the other substance has been deliberately omitted—and each time it has quickly become apparent that best results could be obtained only from the combined treatment. It is a rather unusual fact that this patient's tolerance for gonococcal filtrate has failed to increase, in spite of adequate treatment of the focus, the reason for this is not apparent.

In some cases, sensitivities other than to bacteria may play a part.

A girl of twenty-six was troubled for a year with steadily increasing stiffness of fingers and knees, with slight periarticular swelling. Severe general morning stiffness was a prominent feature. She suffered also

Dosage was accordingly adjusted, and alternating injections of autogenous vaccine and toxoid were administered. Within a few weeks improvement was apparent, and has been rather consistently maintained. This patient is not cured, but she is able to go about her duties with less discomfort and fatigue than at any time for several years.

In view of the moderate success attained with this patient, and inasmuch as autogenous vaccine alone had seemed inadequate, others were subjected to long courses of treatment with alternating doses of vaccine and toxoid. All of them were sensitive to both products. For reasons which will later become apparent, no attempt was made to push beyond the maximum tolerated dose, which was usually discovered within a few weeks. Nothing spectacular has been seen or expected. In the author's private practice, nine of sixteen patients so treated have shown definite improvement. This may seem a small percentage, until it is remembered that *all* of the improved cases had been resistant to other types of therapy. Those individuals have done best whose treatment was begun during the summer or fall months and then carried through the winter. Without exception, they have noted a definite, though at times fluctuating improvement. In others, recurrent sinus activity during March and April has curtailed treatment until the infection could be brought under control. Such activity was always accompanied by recrudescence of symptoms and loss of tolerance to vaccine. In two cases, because of intractable nasal infection, a change of climate was advised, and was followed by prompt improvement, but in neither had vaccination been undertaken until the middle of winter.

In cases such as these, the presence of an undrained or poorly draining nasal focus will prevent satisfactory treatment, in fact, intolerance to the procedure leads to suspicion of its presence. For example, one patient remained persistently refractory and reacted to even minute doses. This discovery of a previously overlooked purulent frontal sinusitis and its proper management resulted rather quickly in a degree of clinical improvement, and concurrently it became possible to vaccinate him satisfactorily.

In certain patients first seen during

the summer months, sinus infection was not apparent, either clinically or roentgenologically. It was not until the association was observed of arthritic relapses with nasal recrudescences that the presence of sinus trouble was suspected. Questioning then revealed the fact that joint manifestations were usually more pronounced during the late winter and spring months, while the summer season might even be a period of comparative well-being. Possibly there exists a low-grade infection of the sinus mucosae, comparable somewhat to that of chronic tonsillitis, which is insufficient to be detected clinically except during periods of heightened activity, but which may serve as a sensitizing focus. Be that as it may, in such patients, at any season of the year, pathogenic organisms, usually *Staphylococcus aureus*, can always be grown, frequently in large numbers, from the ostia of the sinuses below the middle turbinates, or from the interior of such as are accessible to probing. It is probable that into this category fall many of those unfortunates who, because the nasal infection was not apparent upon a single examination and no cultures were taken, have been regarded as having no demonstrable focus, and whose disability has persisted in spite of the usual measures. The fact that the arthritic host is sensitive to these organisms and their products is suggestive etiologically but not conclusive, in view of the known lack of specificity of sensitization to gram-positive cocci. Unfortunately, there is today no known method of demonstrating the causative role of any one strain of bacteria in any one arthritic patient, consequently the evidence must still be indirect and even indefinite, as is that just presented. However, the fact remains that in at least some of those patients, persistent treatment with *staphylococcus* vaccine and toxoid is clinically of value, while the use of hemolytic streptococci is unsatisfactory, inadvisable or even harmful because of intolerance.

Pneumococcal sinus infection has been found to act as a focus. For example

A man of fifty-five suffered every spring from recurring acute arthritis associated with recrudescences of a multiple sinusitis. *Pneumococcus* group IV was isolated in pure culture from the nasal discharges. Be-

solution in one cc ampoules for intramuscular injections, in doses of 05 grams (5 centigrams) and 10 grams (1 decigram). It is administered at weekly intervals until three series, each aggregating 22 grams, have been given. The interval between the first and second series should be not more than six to eight weeks, that between the second and third series may be three to four months. The sedimentation rate is used as a laboratory index of the control of the disease. The average reading before treatment was 418 mm in one hour, gradually falling throughout the months of therapy to a normal or ten mm or less in one hour. Forestier sounded a warning regarding the toxicity of the drug, but did not emphasize the frequent incidence, nor violence of its manifestations.

Our series comprises fifty-two cases. More than fifty per cent have developed toxic symptoms, intolerance, or allergy, necessitating discontinuance of the drug. All who could tolerate it—twenty-five so far—have shown rather startling clinical improvement, a remission of pain after four to six injections, and definite improvement of function with decrease in periarticular thickening at the termination of the first series, although many of these have had some toxic manifestations necessitating interruption of treatment for short periods from time to time.

Transient albuminuria was frequently noted. No cases of nephritis developed. A mild hepatitis occurred in one instance, associated with jaundice. No purpura, but two instances of severe epistaxis were recorded suggesting a disturbance of the hematopoietic system. There were two instances of severe gastroenteritis, ushered in with chills and followed by fever ranging to 103° and 104°F, and marked malaise, lasting a week in one patient, and two weeks in the other. Six or eight have reported experiencing this syndrome in milder forms. At least six have developed corneal ulcers—quite difficult to heal. Three have had a generalized exfoliative dermatitis, one after 19 grams (nineteen decigrams), another after but 15 grams (fifteen centigrams), and the third after 65 grams (sixty-five centigrams) of the first series. Stomatitis, glossitis, and milder forms of dermatitis have been frequently encountered. We record one death.

A female, age fifty-nine, suffered from rheumatoid arthritis of six years duration. After six five-centigram doses (.30 grams total) of myochrysin she developed mental confusion, followed in five days by delusions, great cerebral excitation, stupor, coma, and death. All of the symptoms were cerebral, and in the opinion of the Medical, Neurological, and Ophthalmological departments the condition was one of toxic psychosis-encephalomalacia. Death was caused probably by cerebral thrombosis as a result of

therapy with a heavy metal. There was no autopsy.

As a result of the work so far, despite careful technic, constant laboratory check on blood and urine, use of the identical drug, together with vigilant search and questioning of all patients at each revisit to detect the earliest manifestation of toxicity, we are of the opinion that

1 The dosages advised by Forestier are not tolerated by our patients.

2 Even in small doses the drug is very toxic.

3 Allergic or toxic symptoms can develop so suddenly, and with such small aggregate dosage, as to make this type of therapy definitely hazardous.

4 In its present form it is not a safe therapeutic agent to place in the hands of the medical profession, despite the French optimism as a brief for its innocuousness.

5 The percentage of patients who can tolerate the drug is too small to subject the average early case, in which it allegedly does the most good, to the risk that it entails, especially when we are obtaining equally as good, if not better, percentage rates of arrest with vaccine therapy or filtrates a phase of treatment, by the way, in which the French are far behind us.

6 There is no evidence in Forestier's large series, 550 cases, or in our small series of fifty-two cases, to assume that gold therapy is curative.

7 This may be said in its favor, however, that if a patient is tolerant of the drug it is more likely to produce rapid symptomatic improvement, sometimes a dramatic quiescence, and the remissions are more sustained than by the orthodox methods now in use in this country.

DR. A. S. GORDON, *Brooklyn*—The diversity of opinion and the investigations of the subject from many angles will eventually lead to progress in the field of arthritis. A specific is not necessary. We must remember that during the past twenty-five years a great deal of progress has been made in the management and treatment of tuberculosis and yet we have no specific for the disease. Chronic arthritis is, in many respects, similar to the problem of tuberculosis, both from the medical and social standpoints.

I was especially interested in Dr. Hitchcock's paper on the treatment of infectious arthritis because for the past five years I have been using not only staphylococcic toxin but many varieties of streptococcic toxins, both autogenous and stock, and I am very enthusiastic about this method of therapy. The soluble toxins are much more potent antigens than the bacterial vaccines, and the response produced by them is correspondingly better. However, the patient must be tested to the toxin and the therapeutic dosage correlated with the degree of

from unexplained gastrointestinal upsets. There was no seasonal incidence of symptoms. Thorough examination failed to reveal a clinically infected focus, however, the blood serum yielded a positive complement fixation reaction with gonococcal antigen. Treatment was undertaken with gonococcal filtrate with fair but unsatisfactory results. Inquiry was made into the dietary habits, and it was found that the patient was in the habit of eating large quantities of fish. Elimination of all sea food from the diet resulted within two weeks in marked relief from the stiffness, while the gastrointestinal upsets ceased completely following similar omission of cow's milk. On two subsequent occasions, restoration of fish to the diet was promptly followed by recurrence of stiffness and some swelling. She received a thorough course of treatment with gonococcal filtrate, and did well through the winter until March. A staphylococcal nasal infection then supervened, and at once the old symptoms reappeared. Combined treatment with staphylococcal vaccine and toxoid was followed by rapid relief, and today she is quite free of any distress. She is, however, I am afraid, still subject to recrudescences, given a sufficiently strong infective stimulus. Tentatively, at least, she must be regarded as an example of multiple food and bacterial sensitization.

In another case, in which no decision as to the offending foodstuff could be made from the history, the simple use of a Rowe elimination diet resulted in so much relief that the patient dropped out of sight before the responsible allergin was finally detected. Possibly the occasional success of apparently meaningless food restrictions may result from the unwitting elimination of offending food proteins.

Finally we have the intriguing question as to the role of endocrine upsets. With the gradual development of more accurate methods of study, we hope that some day this role will be accurately delimited.

DR. DONALD E. MCKENNA, *Brooklyn*—I can add little, if anything, to the subject as it has been presented by the readers of these papers, and the able discussers preceding me.

I would like at this time, however, to report on the progress of a small, although carefully selected, group of cases of chronic rheumatoid arthritis treated at The Brooklyn Hospital since February 1935 [fourteen months] with gold sodium thiomalate-myochrysine. It is an aqueous solution of the

For the present, reliance must still be placed upon clinical observations in a field where the imagination is still given rather free rein. Reference has already been made to the girl whose premenstrual and menstrual symptomatic exacerbations were relieved by prolan. In her case the indication for the use of this hormone consisted in the presence of definite hypopituitary stigmata. In another patient, arthritic complaints developed simultaneously with the onset of menopausal symptoms, and were considerably relieved when follicular hormone was administered. In both instances, however, it is an open question whether the arthritis itself was greatly influenced by hormone treatment, or whether the relief of the patient's other complaints did not serve simply to make her more tolerant of her arthritis. Too great caution cannot be employed in the interpretation of results in these and similar cases.

Conclusion

It has not been the purpose of this paper to present a fixed outline of treatment for arthritis. Enough has been said to reveal that this is impossible. Therapy must be fitted to the individual patient, keeping in mind the possibilities of multiple focal infection, of infection not always apparent clinically, but suggested by the history and bacteriologically detectable, of infection with diverse organisms, of complicating non-bacterial allergies, and finally, and rather vaguely, of endocrine upsets. With proper surgical, biological, and eliminative measures, and a good measure of perseverance on the part of patient and physician, the outlook for many of these cases is really not at all entirely hopeless.

713 E. GENESEE ST

Discussion

metal, in all respects similar to that used by Jacques Forestier of Aix-les-Bains, France, who, on a visit to Brooklyn in the fall of 1934 reported there, and elsewhere in this country, the results of six years experience in the treatment of this disease with gold salts. From an analysis of 550 cases he stated that, "this form of therapy gave better results than any previous method employed in France."

For those unfamiliar with the treatment it might be said that the metal is suspended in

THE ECONOMIC PROBLEMS OF PHYSICAL THERAPY

S E BILIK, M D, *New York City*

Physicians, generally appreciate the growing importance of physical therapy and recognize that where indicated it is as specific as anything available in our therapeutic armamentarium. There is hardly a practitioner who has not an office full of expensive physical therapy apparatus. Admittedly, relatively few physicians are qualified to make use of these powerful modalities intelligently and knowingly.

The meager and frequently erroneous instructions supplied by the manufacturers of the apparatus are of little value. Attempts to cull the desired information from text books and periodicals fail, primarily, because lacking the essential background, the tyro in this field finds difficulty separating the wheat from the chaff, and finally because it is always hard to learn correct technic merely by reading printed instructions.

Thus, in the course of time, the average physician establishes a "muddling through" system of his own, based on stray bits of information from various sources. The busy practitioner assigns the task of administering physical therapy to an office aide who may know even less about it than the physician himself—certainly, an undesirable state of affairs, unfair to both the physician and to his patient. The former gets poor results, the latter is the recipient of "gold bricks."

Physical therapy is too valuable and complex a specialty to permit of slipshod or "shot-gun" technic. A thorough grasp of the physiological effects and of the proper method of administration of each modality, is vitally essential to the attainment of beneficial results. The effective use of insulin, digitalis, salvarsan, endocrines, serums, vaccines, etc., depends on correct technic. Wrong technic may produce no results or actual harm. The same holds true with a vengeance in the field of physical therapy.

Where and how is this desirable knowledge of physical therapy to be obtained? Until recently this stepchild of medicine was completely ignored in medical schools. At present, many of the schools

have added instruction in this subject, but instruction so cursory and inadequate as to make it of no lasting or practical value. No time should be lost in placing the teaching of physical therapy on a major basis, at least on a par with that of pharmacology.

Meanwhile, the newly hatched medicos are joining the vast army of practitioners who are using physical therapy without having any worthwhile concept of its theory or practice. An attempt should be made to fill this void by means of an extensive series of postgraduate courses at teaching centers, hospitals, county medical societies, etc. Sporadic lectures are appeasing, but utterly ineffective, merely adding a few more stray bits to one's physical therapy slumgullion. What is wanted is a carefully planned, exhaustive practical presentation of the entire subject.

Assuming the possession of a fairly sound concept of the principles of physical therapy, its effective prescription and administration is not difficult and can, and should be done by the general practitioner—who has the time for it. For physical therapy does take a great deal of the physician's time—a conservative estimate would be an average of one hour per treatment.

The busy physician, appreciating this, frequently prefers to refer his cases in need of physical therapy to those specializing in the latter field. The cases so referred are quite numerous—sufficient to keep comfortably busy a large group of physical therapists (physicians specializing in physical therapy) if

In the vast Metropolitan area with its 14,000 physicians, there are at most twenty physical therapists. In the entire state there are probably five more. I am not considering the variable number of those who merely dabble in the field. Within the past five years, to my knowledge, not a single young physician has entered this specialty. When a recent graduate, who finds physical therapy interesting, asks my advice as to whether he should select it as a specialty, I am compelled in all honesty to dissuade him

allergic sensitivity as shown by the intradermal reaction

Recently I had occasion to demonstrate the following

I selected four patients from the medical ward of the Kings County Hospital, *first* a case of rheumatoid arthritis, *second*, a case of chorea (afebrile), *third*, a case of recurrent rheumatic fever with acute endocarditis, *fourth* a case of recurrent rheumatic fever in the convalescent stage (afebrile). These patients were tested intradermally with the soluble toxins of three strains of hemolytic streptococci—(1) scarlet fever, cultured from the blood of a fatal case of scarlet fever, (2) erysipelas, cultured from the skin lesion of a case of recurrent erysipelas of twenty years duration, (3) a "rheumatic strain," cultured from the throat in the acute stage of a recurrent attack of rheumatic fever before the joint symptoms appeared. As control tests I used Sterile broth in which the streptococci were grown, and the boiled toxins of these organisms. The twenty-four hour reactions were as follows. The case of rheumatoid arthritis showed similar reactions to all three toxins which were read as a moderate reaction in each case (area of erythema, tenderness and induration, two centimeters in diameter). The case of chorea showed a marked reaction to the "rheumatic strain"

(area of erythema, tenderness and induration, four centimeters in diameter) but negative reactions to the scarlet fever and erysipelas strains. In the case of recurrent attack of rheumatic fever with acute endocarditis, all reactions were negative, while the patient in the convalescent stage of the recurrent rheumatic fever attack, the "rheumatic strain" showed a marked reaction (similar to the reaction in the chorea patient), and the scarlet fever and erysipelas strains showed negative reactions. All control reactions were negative, in all patients.

I shall not enter into a discussion of the interpretation of these reactions, but will say that insufficient attention is paid to the significance of such reactions, and the relation of the clinical manifestations to the toxins of the various bacterial strains. Finally, I want to say that entirely too much stress has been laid in the past on the bacteria or the bacteriologic agents of disease, and not enough stress on the victim or the patient behind the disease. The same or similar bacteria may produce different clinical manifestations in different patients depending upon the hereditary and constitutional predisposition of the individual.

COUNTERFEIT FOOD

Worse than the danger of counterfeit cash is the menace of counterfeit food. Arthur Kallet, in his new book called "Counterfeit" (Vanguard Press) remarks that one special difference between money counterfeiting and goods counterfeiting should be pointed out. There are, of course, many differences, most of which would probably establish money counterfeiting as a less serious crime, socially, than goods counterfeiting.

With goods, the counterfeiting—that is, the representation of the goods as something which it actually is not—may be introduced by the manufacturer or by a distributor.

Sometimes, however, the entire job of counterfeiting is done by the retailer. Here it is the butcher shop. Housewives will testify that many butchers turn counterfeiters every time they utter such a word as "tender" or "choice."

Another kind of butcher-shop counterfeiting is practiced by many, though by no means all, butchers, with the aid of a chemical preservative called sodium sulphite. Stale malodorous meat loses its foul odor, and turns a fresh, juicy red when dosed with

sodium sulphite, and is frequently sold as good, fresh meat.

Not only is the meat itself injurious, particularly if eaten rare but the sodium sulphite is a poison which can do considerable injury to the digestive system.

The meat most likely to be preserved (from the garbage can) with sodium sulphite is hamburger, simply because it is easy to make use of left-over and stale scraps by grinding them together with a dose of sulphite. If you must buy chopped meat, never buy ready prepared chopped meat. Order a cut and have it ground before your eyes.

Not only the butcher sins with sodium sulphite. At the "hot dog stand," the hamburger "places," the restaurant or cafeteria you will often get this chemical with your hamburger sandwich.

Some states confiscate sulphited meats when their inspectors find them, and occasionally levy small fines on the offenders. But they are interfering with an excellent source of profit. Successful state control of this evil is, therefore, exceptional.

One of the physicians examining some school children said to a definitely malnourished little girl "Do you like milk?"

Little Girl "Yes."

Doctor "Does mother give you some?"
Little Girl "Sometimes, but we just take a pint a day and we're raising a puppy and it has to have milk."—Contact

multi-colored circular singing loud the praises of this new "Health Institute" and, of course, soliciting your kind patronage. Within a few weeks after opening, the place is mobbed with patients seeking health at bargain counter prices.

Similarly, many medical publications carry advertisements of individuals and institutes specializing in physical therapy (the physician-physical therapist is at a distinct disadvantage in this competitive field in that he is unable to advertise or in any way solicit your patronage). Finally, your friends refer a constant stream of aides and masseurs with glowing recommendations of their qualifications.

As a general rule, the physician refers his patient to a lay technician with some such prescription as "Please give Mrs. Brown physiotherapy for arthritis of the knee." Or, if he happens to be under the temporary spell of some one modality, he is apt to write "Please give Mrs. Smith diathermy to her right foot." These are indeed dangerous prescriptions in that the practitioner is practically asking a lay technician to become a prescribing physician. One must appreciate that there is no cut-and-dried routine in physical therapy—each case calls for a specific combination of modalities. The patient's reaction determines whether the initial prescription will be abided by or will have to be modified. Only a thoroughly qualified physician can prescribe effective physical therapy. It is utterly folly to expect a lay technician, however intelligent, to be able to interpret therapeutic effects and modify them to combat the existing pathology.

A prominent surgeon drops into a clinic I supervise and finding me absent, asks the technician what routine of treatment she would advise for a given case. The girl readily obliges. A few days previously, I had recommended the discharge of this aide because of her poor qualifications. Yet, here is an experienced surgeon, naturally eager to obtain a good result in his case, accepting the advice of a relative ignoramus!

A traumatic surgeon requests the same technician to do a neuromuscular test to determine the 'R D' of a musculospiral nerve involved in a fracture of the humerus. An internist asks the aide to do

a similar test to determine whether the neurological lesion is of central or peripheral origin. Even an experienced physical therapist or an experienced neurologist would find such assignments difficult! It is quite evident that the great mass of physicians think of physical therapy in terms of mere mechanical technique, whereas it is as complex a specialty as there is in medicine.

Meet the "State Registered Physiotherapist." In 1926, a postscript (which should never have been written) to the N. Y. State Medical Act, established certain minimum educational requirements qualifying lay physiotherapists for a state license. Originally, this was to provide for a small group of, supposedly very highly qualified, technicians. Old Man Politics opened the flood-gates and at this date there are 452 "S R P's" of which only thirty-four or eight per cent had the required educational qualifications. A considerable number of these licenses went to a horde of chiropractors and other irregular healers to be used as a cover for their unlawful practice of medicine.

I have before me a professional card presenting on its face the legend

John R. P. T.
Physiotherapist
Registered

On the reverse of this card, we read
Actino-therapy Mechano-therapy Electro-therapy
Colonial Irrigations Foot Adjustments Spinal Adjustments

These various methods are used as auxiliary adjuncts for the elimination of disease, affecting the entire system and rejuvenating every organ and part of body involved.

Being a chiropractor does not necessarily disqualify a man from being a good physiotherapist. What does disqualify him is a lack of knowledge of the very fundamentals of physical therapy. During the last few years I have had occasion to examine a considerable number of these "S R P's" for the government. I was amazed to find how meager was their knowledge of physical therapy. Their entire concept may well be characterized as a hodge-podge of disconnected facts and fancies, thoroughly seasoned with chiropractic bunk and bombast.

Many of these men were not physiotherapists when the politicians made these licenses available. They saw an oppor-

For after twenty-six years in physical therapy, I am convinced that under existing circumstances a physician cannot make a decent living in this specialty, and even as "the butcher, the baker, and the candle-stick maker" the medico too must pay attention to the all-important question of economics.

Among the small group of physical therapists mentioned above, are some who have other sources of income enabling them to follow a specialty for which they have a particular liking—these men spend more on their specialty than they earn from it. One or two have had the business acumen and the necessary capital to commercialize their specialized knowledge. Some supplement their meager income from their practice with the salaries received from their hospital connections. The rest struggle along, striving vainly to make the proverbial ends meet. I suppose I ought to mention the many who would have preferred to have stayed in this specialty, but were compelled, through sheer necessity, to turn to other, more lucrative, fields.

As a result, there is a definite scarcity of physical therapists and this scarcity is going to become more acute since, as pointed out, no new men are coming into the field. One of the largest physical therapy clinics in New York, treating close to 500 cases daily, has but one physician to supervise its activities. For years, every effort to interest physicians, young or old, to join the staff has failed. There is apparently no one who is interested in physical therapy as a specialty. The common practice of placing the physical therapy department in charge of an orthopedician, is on a par with heading the department of surgery with an obstetrician.

This scarcity has led to physical therapists accepting multiple hospital connections—not at all a desirable arrangement, since physical therapy demands a great deal of the time of the supervising physician. A man, however capable and energetic, tearing around from one hospital to another, is not very apt to do good work in any of them—the old story of "too many irons in the fire and none of them hot."

It is essential to keep in mind the qualifications of a good physical thera-

pist. Loading the office with a variety of apparatus, gulping voluminous literature, or the superficial knowledge obtained through the medium of the very short courses intermittently promoted by manufacturers of apparatus, will not make a physical therapist any more than the possession of sharp scalpels, a set of Keene's "Surgery" and hours spent in John Erdmann's amphitheater will make a surgeon.

Firstly, a physical therapist must be a darn good physician. Requests for consultations come from every service and from highly qualified specialists. It behooves the "P T" to know something more than the voltage or the frequency of his diathermy machines when he discusses a case of multiple sclerosis with a Dr. Foster Kennedy. He must have a particularly thorough knowledge of surgical, orthopedic, neurological, and general medical conditions. He ought to be a "shark" on pathology, in order to be able to visualize the tissue damage he is asked to repair. Finally, he must know the various divisions of physical therapy and avoid forming hobbies which will quickly brand him as a "crank." Too many physicians are swept off their feet by crack-brained advocates of new panaceas. Right now we are in the midst of the "short-wave" craze. Some of the silly claims put forth by the boosters of this new miracle performer are enough to delight an idiot. The best results in physical therapy are attained through intelligent and effective combination of the various modalities particularly indicated in any given case.

Thus physical therapy is a complex, important, fascinating specialty. Were it financially remunerative, sufficient to assure the physician a comfortable livelihood, many would come in to the field with resultant gain to all concerned.

Throughout the year, the physician is intensively solicited by "institutes", gymnasia, physiotherapists, technicians, masseurs, nurses dabbling in physical therapy, etc. A Coney Island bath-house suddenly blossoms out as the "Baden-Baden of America" featuring every variety of physical therapy at R. H. Macy prices. Full page advertisements in the tabloid newspapers shriek the good news to the populace. The physician is honored with a

multi-colored circular singing loud the praises of this new "Health Institute" and, of course, soliciting your kind patronage. Within a few weeks after opening, the place is mobbed with patients seeking health at bargain counter prices.

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Many of these men were not physiotherapists when the politicians made these licenses available. They saw an oppor-

tunity to camouflage their irregular and unlawful practice of medicine and grasped it. As for physical therapy, they never knew it and never will know it, if they practice it another twenty years, primarily because of an utter lack of a proper fundamental background.

The law permits these "SRP's" to have their own offices but requires that all patients treated by them, should first be diagnosed and prescribed for by a physician. This stipulation is not at all to their liking. The *Bulletin*, the official organ of the State Society of Physiotherapists, bristles with statements resenting this imposition and reflection on their professional status. John D. Bascomb, the president of the organization in a recent article entitled, "Can the General Practitioner Retard the Progress of the Patient in Various Cases?" argues

There are few general practitioners who can sincerely and intelligently diagnose the important pathological conditions that confront the profession of physiotherapy.

There is something inconsistent in a law that is enforced for the SRP to be under the supervision of a general practitioner who does not understand physiotherapy.

Their contention is, "Physiotherapy is a branch of medicine. The registered physiotherapist should be considered part and parcel of the medical profession in every respect. He is a specialist in the art of physical therapy." Organized into a state society these "SRP's" are using every means known to politics to obtain legislation to place them on an independent basis as "Doctors of Physiotherapy." And these aspirations to form another group of half-baked healers come from a body of men, the great majority of whom—418 out of 452—have never fulfilled the minimum educational requirements of the state, and whose means of obtaining these very desirable state licenses may not stand too close investigation!

Suppose they did possess a thorough knowledge of the technic of physical therapy—would that qualify them to prescribe treatment as they desire to? A correct diagnosis is a pre-requisite to effective therapy. A pharmacist knows how to concoct medications and knows their dosage—better, perhaps, than the physician does, but that is hardly reason enough to create "Doctors of Pharmaceuthery"

with the right to dispense drugs without a physician's prescription. The SRP's in their eagerness to be "Doctor's" with the right of independent practice, are slightly overestimating the value of mere technical skill.

I am going to qualify the rather sweeping condemnation of the "SRP's" by pointing out that a small group of the latter do possess the essential qualifications of good technicians and are ethical in their relationship with the medical profession. Among these, I would particularly include the graduates of the New York University course in physical therapy (This course has been discontinued). Close acquaintanceship with many of the latter group convinces me that they are capable, ethical, and desirous only to serve as aides of the physician in hospitals and offices. They do not seek the right to practice independently as "Doctors of Physiotherapy."

The facts submitted above regarding the "SRP's" are familiar to all concerned with the enforcement of the State Medical Act, and particularly the State Department of Education. It is known that many of these "SRP's" are ignoring the regulations and are accepting patients without bothering to require a physician's prescription. This is particularly true in the physical therapy departments of the numerous, privately owned, "institutes", gymnasia, bath-houses, usually "covered" by a "SRP." If we assume that the object of these establishments is to provide means of conditioning the body with exercise and bathing, then there is no earthly excuse for the availability of powerful physical therapy modalities which can only be used in the treatment of trauma and disease. The facts are that members of these establishments are being treated for all sorts of aches and ills, the supervising physiotherapist doing all the diagnosing and prescribing—a clinic practicing medicine illegally. The authorities are cognizant of this, but have thus far been unable to find effective means of solving the problem. It is one thing to be aware of unlawful activities; it is quite another matter to obtain evidence which will stand up in court. The culprit must be caught "red-handed." At all times criminal investigation and persecution is both ex-

pensive and time-consuming. The one sensible solution would be the abrogation of the present regulations and the passage of new legislation to establish minimum educational and professional qualifications for physiotherapy technicians. The latter should not be permitted to conduct offices of their own in competition with those of physicians, but should be rigidly restricted to service in hospitals and doctor's offices.

As an interesting serio-comic aside, I quote the following bit of news which gave sophisticated New York City a hearty "belly-laugh." Under date of June 22, 1936, the newspapers report

The raided massage parlor, known as the Danish Institute, advertised in the classified telephone directory, claiming "Miss Anna S—, Registered Physiotherapist Massage, Medicinal Packs, Baths, Colonic Irrigations

Highest testimonials from New York's leading physicians

A novel establishment with rare rugs and champagne the wealthier patrons graduated to the floors above where they could obtain treatments not prescribed by any ethical physician. In an upstairs apartment they discovered a highly embarrassed young woman and an equally perturbed male "patient" who had called for treatment on "physician's advice."

The confusion of the pair was intensified by an absence of attire and the presence of a huge, leather blacksnake whip. When Detective C—, began removing his garments, one of the pretty attendants entered the room and began to strip.

The daily income ranged from \$500 to \$1,000. The police are laying plans to raid more such "institutes."

Not recognized nor licensed by our state, in spite of their excellent educational and professional qualifications, is a group of physical therapy technicians organized under the banner of the "American Physiotherapy Association." The nucleus of this group was formed by a splendid type of men and women who served as aides during the war. Earnestly and sincerely cooperating with the medical profession, the A P A has established rigid qualifications for admission. Their ethical standards are of the very highest—they seek to work for, and under the guidance of the physician. Graduates of such splendid schools as Harry Stewart's, R & C, Harvard, Northwestern, etc., they are thoroughly skilled in the

various branches of physical therapy. Yet, they appreciate their limitations and do not attempt to overstep them. In selecting a technician you may with confidence accept those recommended by The American Registry of Physical Therapy Technicians (30 N Michigan Ave., Chicago) allied with the A P A.

Finally, we have the very large group of masseurs. Whether graduates of a European school (which adds glamor but no other virtue) or of one of our own schools, these men and women are capable in direct proportion to their mental fitness and their basic education. They are taught massage, corrective exercise, and hydrotherapy with considerable thoroughness. Their knowledge of electrotherapy is negligible. Close contact with hundreds of masseurs enables me to say that with few exceptions, they are conscientious, earnest, reliable, honest, ethical, and capable—as masseurs. They are not physical therapy technicians. Under proper guidance and supervision, these men and women will do excellent work. We should not expect them to prescribe the kind, duration, and intensity of the massage or exercise indicated in any given condition. This must remain the responsibility of the physician who appreciates the pathology he is dealing with.

Not all "licensed" masseurs are qualified. In New York City, the regulations governing the granting of licenses to masseurs, are rather loosely worded and as a result many a bruiser or ex-bartender who doesn't know a muscle from a liverwurst, is parading around as an "Expert Licensed Masseuse." Therefore, when selecting a masseur, be on your guard—do not be unduly influenced by his physique or Scandinavian "brogue"—find out what school he graduated from.

In summary, my contention is that physical therapy is a specialty of constantly growing importance, that it is desirable that more physicians come into this field, and that it can only be achieved if the profession as a whole, will give its support to these pioneers by referring cases to them rather than to the layman, as has been the rule in the past. The physical therapist will employ properly qualified technicians and will guide and supervise their activities. Your patient will be assured of receiving a routine of

treatment particularly indicated in his case and the treatment will be varied as the progress of the case demands. You will be consulted and your interests will be protected in that there will be no possibility of your patient being "lifted." Finally, it is well to keep in mind that the fees charged by the physical therapist are no higher than those commonly charged by lay technicians.

This is not a personal appeal. I am fortunate in having a bit of an income which makes me independent of my practice. I am in physical therapy because of a sincere liking of this specialty and a thorough conviction of its efficacy in the treatments of human ailments. It is be-

cause of this conviction and an appreciation of the handicaps which face the embryonic physical therapist, that I decided to place the facts before you. I feel confident that you will recognize the honesty of my motives and the justice of my argument.

Incidentally, my understanding is that an almost similar situation exists in the x-ray and the laboratory fields, where physicians thoughtlessly refer their patients to advertising laymen, while your brother physicians in these specialties wait for the occasional crumbs from the thoughtful ones.

667 MADISON AVE.

THE COUNTRY DOCTOR

A country doctor in a little community in Minnesota recently cancelled unpaid bills totalling \$50,000 leaving about \$20,000 unpaid bills on his books. Knowing something about the demand upon the country doctor's time, *The Ulster County News*, of Kingston, ventures the opinion that this lone doctor who reached the news columns of the papers is in no wise an exception.

A country doctor is not like a country electrician, or painter, or carpenter, or mason. These men, experienced in the credit of their neighbors, may refuse to work on a job that promises no payment. In fact, people will not hire the craftsman, as a

general rule, if they haven't the money to pay him. But when little Jack or Jill, or Baby Jim or Jane become ill, the country doctor just has to come—money or no money. And bills pile up.

What is there to do then when bills get old, people move away, folks pass on leaving no estate? The country doctor finds his accounts receivable automatically cancelled. That is, if he ever did put the bills on his books.

A close friend of ours, says the Kingston editor, is a country doctor with his office in an Ulster County town. His office is constantly crowded with people. Frequently he has to leave early in the morning, late at night, forget his breakfast, lunch or dinner—just go—and keep on going, forgetting self and family. No time for vacations. No time for a trip here or there. He's needed right in his own community. He's never said a word about people paying him. He seems to get his reward when little Jack or Jill pulls through from a close call with pneumonia or when Jim or Jane undergoes an operation and is O.K. once more.

No, friend, don't think that when one country doctor jumps into prominence with an announcement that he has cancelled bills, and God bless him for doing it—that he has done something that your own country doctor hasn't done. It all means that there is no more useful friend on earth than the country doctor and folks ought to pay him so he can keep on working and living because when he passes on you are going to miss him. And many of them pass on early in life because they were overworked, undernourished and underpaid.



"What a day! An appendix, gall-stones, tonsils, two babies, measles, mumps, a broken leg, and a dollar!"—Fred Balk in the *Country Gentleman*.

Courtesy Nassau Medical News

SUBCUTANEOUS RUPTURE OF THE STOMACH

Review of Literature and Report of a Case

NORMAN J WOLF, B A , M D , *Buffalo*

Surgeon, U S Marine Hospital

By subcutaneous rupture of the stomach, a condition to which the term "subparietal" rupture is sometimes applied, is meant the rupture of that organ unassociated with penetrating wounds of the abdominal wall. This excludes such injuries as gunshot and stab wounds, cases in which there is a pre-existing pathological lesion, as ulcer or carcinoma, are also excluded. This type of rupture may be traumatic or spontaneous.

It is by no means a common condition. Sherren¹⁹ reported 270 cases of abdominal contusion at the London Hospital with only five cases of ruptured stomach. Battle²³ reported 165 cases of gastrointestinal injury with no cases of stomach injury. Eisendrath¹⁵ in 1902 reported 143 cases of injury to abdominal viscera with no cases of stomach injury. Petry¹³ in 1896 collected 219 cases of rupture of the gastrointestinal tract with twenty-one cases of ruptured stomach, thirteen traumatic and eight spontaneous. Glassman²⁰ in 1929, in a comprehensive review of the literature, collected fifty-two cases to which he added two of his own.

Surgical Anatomy

The position of the stomach to a great extent protects it from injury and accounts for the few cases of this type of trauma encountered. When empty the stomach lies at the back of the abdominal cavity and is little exposed to any direct force. The left half of the anterior-superior surface is in contact with the diaphragm and covered by the base of the left lung and the 7-8-9th ribs, the right half is in contact with the left and quadrate lobes of the liver, and over a small area with the anterior abdominal wall. The transverse colon may also cross this surface.

Other abdominal viscera are less well-protected and much more susceptible to injury. The intestines lie against the anterior abdominal wall, especially the jejunum and ileum which are most frequently injured. The liver is protected by the thoracic cage, but its large size,

friability and fixity render it liable to injury. The spleen is likewise frequently injured. The kidneys are poorly protected posteriorly and laterally by muscles, and medially are in close contact with the transverse processes and bodies of the vertebrae against which they may be impinged by a localized force. It is due largely to their anatomical positions that we find the liver, spleen, pancreas, intestines, and kidneys much more frequently injured than the stomach.

Mechanism of the Force

The force producing the rupture may be either direct or indirect. The direct force may be circumscribed (i.e. kicks or blows in the epigastrium), or diffuse (i.e. being run over, crushing injuries, falling on abdomen from a height). Indirect forces are those producing a rupture when an individual falls on his head, feet or buttocks (this type of trauma most frequently produces injury to the liver, spleen or kidney). The force may act by a crushing action, the viscus being impinged between the force and the spinal column, by a bursting action, the force being applied on the anterior stomach wall when the organ is distended, or by a tearing action, the viscus being torn at points of attachment.

It can be readily understood how a stomach may be ruptured when great violence is applied such as being run over or falling on the abdomen from a height. But other forces must be brought into play when the trauma is negligible or absent. In these cases there may be a sudden contraction of the abdominal muscles with a decrease in intra-abdominal space and a corresponding increase in intra-abdominal pressure, thus causing the viscus to rupture. Occasionally powerful contractions of the abdominal wall during vomiting may increase intragastric pressure enough to produce a rupture. In cases of so-called spontaneous rupture the force acts from within the viscus. Overdistention of the stomach, produced either by food or the formation of gas, is an

TABLE I.—TRAUMATIC RUPTURE OF THE STOMACH
(Cases collected from the literature)

Author	Reference	Sex	Age	Type of trauma sustained	Signs of External Abdominal Injury	Injury to other viscera	Trauma to stomach (Operative or post mortem findings)	Operation	Time	Result	Remarks
Poland	1	F	9	Run over by wagon wheel	None	Liver	Tear of mucous membrane	No.	Died	9 hrs	Vomiting.
Poland	1	M	Adult	Struck on right side abd. by shaft of dray	None	Spleen	Tear serosa	No.	Died	8 hrs	
Poland	1	M	90	Maltreated and mauled	None	None	Tear anterior wall.	No.	Died	5 days	Vomited blood.
Collins	2	M	13	Fell 12 feet from tree after meal	None	None	2" rent ant. wall near pylorus.	No.	Died	8 hrs	
Buist	3	M	Adult	Fell 20 feet from R. R. trestle	None	Spleen	5" rent post. wall near pylorus.	No.	Died	14 hrs	Vomited blood.
Lunn	4	M	4	Run over by a cab	None	None	Two 1" tears great curv near cardia	No.	Died	4 hrs	Bleeding from nose.
Jackson	5	M	17	Struck on abdomen by piece emery wheel	None	None	Rents near pylorus ant. and post. walls.	No.	Died	8½ hrs	Bloody vomitus
Minor	6	M	10	Run over by a truck.	Abrasion R.L.Q.	Rent in ileum	Rent lesser curva- ture.	No.	Died	12 hrs	
Limont-Page	8	M	31	Hard blow over epigastrium	None	None	Rent ant. wall near 1 es* pylorus.	Yes*	Recovered		*Spontaneous recovery fibrous structure formation & pyloroplasty later
O Farrell Strassmann	11	M	13	Playing with sled	None	None	3" rent post. wall	No.	Died	22 hrs	
	12	M	Adult	Stomach lavage (opium user)	None	None	Multiple mucosal tears lesser curv	No.	Died		
Rehn	14	F	19	Fell from balcony—abdomen struck an iron rail.	None	Spleen	3 incomplete tears, 2 ant. and 1 post. wall.	Yes	5 hrs. Recovered		Vomited blood
Roeques	14	M	Adult	Fell from first floor to pavement.	None	None	6" rent great curv. cardia.	No.	Died	3 hrs	
Murchison	14	Adult	Train wreck		None	Liver and diaphragm	1½" rent mid. great. curv	No.	Died	Immediately	
Erichsen	14	M	Adult	Crushed between cartwheel & post	None	Liver and spleen.	Almost torn across at pylorus.	No.	Died	5 hrs	
Thiery	14			Fell three stories	About pubes.	Bladder	1" rent ant. wall	No.	Died	5 hrs	
Wilson	14			Run over by wagon wheel	None	Liver	2" rent ant. wall near pylorus.	No.	Died	3 hrs	
Andrews	14	M	17	Crushed between cart and wall	None	Spleen	1" rent ant. wall near pylorus.	No.	Died	8 hrs	
Ogston	14			R. R. accident	None	None	Complete tear at pylorus.	No.	Died	Immediately	
Rohner	13	M	38	Fell 12 meters after a meal.	None	None	Rent ant. wall less. curv near pylorus	No.	Died	5 hrs	
Key Aberg	13	M	52	Stomach lavage following 1 gr opium	None	None	Multiple mucosal tears less. curv	No.	Died	6 hrs	
Lippmann	13	F	17	Jumping over a fence.	None	None	Rent ant. wall less. curv	No.	Died	15 days	Immediate pain and feeling of fullness, symptoms became worse 14 days later
Ettmüller	13	F	10	Fell on stick	None	None	(Gastric fistula)	No.	Recovered		Pain and epigastric swelling developed gastric fistula after several months
Ettmüller	13	F	47	Blow on abdomen	None	None	(Gastric fistula to No. pylorus)	No.	Recovered		Painful swelling which developed a gastric fistula, healing after 9 years
Kronlein	13	M	24	Fell from a horse striking abdomen	None	None		No.	Recovered		Developed scar tissue stenosis with adhesions to liver
Groff	7	M	50	Kicked in epigastrium by a horse	Hemorrhage about umbilicus	None	3" rent ant. wall near pylorus.	No.	Died	15 hrs	
Rose	9	M	20	Fell from roof—3 stories.	None	(Fracture skull)	Rent anterior wall	Yes*	4 mos. Recovered		*Laparotomy for obstruction, adhesions to L. lobe of liver with abscess compressing colon.
Rose	9	M	24	Fell against truck struck L. U. Q.	Con- tusion	Pancreas	2" rent post. wall	Yes*	2 wks Recovered		*Tumor mass developed above umbilicus abscess in lesser omental sac.

(CONTINUED ON NEXT PAGE)

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Clarion	10	M	16	Crushed bet buffers of R. R. trucks.	Abrasion	Spleen	Tears in mucosa ant and post wall.	Yes	12 hrs	Died	36 hrs	
Winterer	16	M	20	Blow on abdomen while playing football.	None	None	8 cm tear mucosa post wall.	Yes*	3 wks	Recovered		*Laparotomy for recurrent hemorrhage.
Rodocanachi	18	F	6	Fell on abdomen while running	None	None	2" rupture greater curv	Yes	24 hrs.	Recovered		
Singler	20	M	23	Iron casting fell on epigastrium	None	None	Tear almost across at pylorus.	Yes	3 hrs.	Died	10 hrs	
Weeks	21	M	35	Steering wheel of auto struck epigastrium during a collision	None	Rupture post rectus sheath	Tear from lesser to greater curv at pylorus.	Yes	Few hrs	Recovered		
Verze	23	F	10	Fell on steps	None	None	Rent post wall at No. fundus	No		Died	8 hrs	
Pancastelli	26	M		Thrown against cart shaft	Abrasion R.U.Q		Complete division of stomach into two halves.	Yes		Died	17 hrs	
Widgans	27	M	8	Run over by an auto	None	Liver and pancreas.	Rent in pyloric region	Yes	Few hrs.	Recovered		
Neuburger	28	M	Adult	Fall from a height	None	None	Rent ant wall pre-pyloric	Yes	9 hrs.	Died	24 hrs	
Balton	32	M	29	Fell from a ladder struck abdomen on piece of projecting iron	None	None	Rent ant wall near pylorus.	Yes	6 hrs	Recovered		
Scotson	31	F	Adult	Automobile accident	None	None	Rent pyloric region near less. curv	Yes	Few hrs.	Recovered		
Scotson	31	M	Adult	Knocked off a bicycle by a bus	None	None	1" rent less curv near cardia.	Yes	Few hrs.	Recovered		
Glassman	30	M	33	Struck across abdomen by a plank.	Abrasion	Spleen	4" rent ant wall near fundus.	Yes	7 hrs.	Died	15 hrs.	
Glassman	30	M	6	Fell to sidewalk	None	None	3 1/2" rent greater curvature.	Yes		Died	6 hrs.	
Moran	30	M	Child	Run over by a car-rage.	Slight		Stomach cut across.	No				
Storaceo	30	M		Fell from a height		Liver	Rent anterior wall	No				
Ziegler	30	M	23	Crushed bet R. R. cars.	None	None	Incomplete tear ant wall	Yes*	3 wks	Recovered		*Laparotomy for tumor mass and obstruction cent containing 3 liters dark fluid formed at point of rupture
Parry	30	M	60	Struck on abdomen following an explosion	Superficial wounds.	None	4 1/2" rent anterior wall	No		Died	4 hrs.	
Marchetti	30	M	Adult	Thrown against a plank.	None		2" rent less curv near pylorus.	Yes	Few hrs.	Recovered.		
Ipsen	30	M	23	Struck on abdomen by handle bar of a bicycle.	Abrasion R.U.Q	None	1 cm. rent great curv near pylorus.	Yes	Few hrs.	Recovered		
Mattieux	30	F	56	Reaching for a vase set under bed.	None		2" rent at pylorus.	No		Died	3 days	
Wilson	30	F	33	Jumped over a fence after eating	None		2" rent at pylorus	No		Died	18 hrs.	
Revilliod	30	F	28	Fell to floor	None	None	4 cm. tears less curv on ant. and post walls.	No		Died	2 1/2 hrs.	

important factor in these cases Glassman³⁰ believes that the distention paralyzes the nervous mechanism so that the overfilled stomach does not empty, with subsequent fermentation and further dilatation, and eventually rupture occurs. Another theory is that overdistention may interfere with the circulation, producing a softening of the stomach wall and subsequent rupture.

Experimentation

Rupture of the normal stomach has been the subject of considerable experimentation by several writers. Ritter,¹⁴ experimenting with animals, directed a blow with a knobbed stick against the abdominal wall. He frequently produced

a hematoma between the mucosa and submucosa but never produced a rupture. Vanni¹⁴ filled the stomachs of animals and then struck them over this area with a club. He frequently obtained mucosal tears often extending into the muscularis, but no complete rupture. Murdfield²⁹ filled normal human stomachs immediately after death with two-three liters of weak HCl, then added NaHCO₃. He regularly produced a rupture, at least in the mucus membrane. Kay Aberg¹⁷ found that overdistention produced typical injuries to the mucosa along the lesser curvature near the cardia. Further distention produced complete tears along the lesser curvature, the tearing taking place from the inside of the viscus outward (as probably occurs

in cases of spontaneous rupture) He believes that the rupture of the stomach along the lesser curvature when overdistended is due to a mechanical factor, the cone-shaped formation of the stomach Fraenkel¹⁷ after a series of experiments always produced a typical rupture along the lesser curvature but concluded that this was due to an anatomical cause He found that muscle tissue of the lesser curvature had less elasticity than that of the greater curvature and therefore there is a greater resistance to stretching along this region This, together with the fact that there are fewer mucosal folds along the lesser curvature, produced a greater tension on this area during overdistention and consequently it ruptured first

Age and Sex Incidence

In this entire series of cases, forty-two occurred in males and twenty-one in females In the group of traumatic ruptures the male predominates (76%) This is probably due to the fact that they are subject to trauma in general more frequently than women While in the group of spontaneous ruptures, fifty-nine per cent of the cases occurred in women

The age incidence varies widely, it being from four to ninety years in this series with an average age of 28.4 years

Pathogenesis

The forces previously mentioned may produce the following lesions

- 1 Tears of the mucosa
- 2 Tears of the serosa
- 3 Tears of the serosa and muscularis
- 4 Separations between the mucosa and muscularis (hematoma)
- 5 Complete rupture thru all layers

In the series of cases here reported complete rupture occurred in eighty-seven per cent, the most common location being near the pylorus on the anterior wall of the stomach extending down from the lesser curvature Of these cases the rupture was located at the pyloric end in seventy-four per cent of the cases, on the anterior wall in seventy-four per cent, and at or near the lesser curvature in sixty-seven per cent

In addition to the injury of the stomach, especially if due to a diffuse type of trauma, there are associated injuries to other abdominal viscera in about

fifty-five per cent of the cases, the liver and spleen being the organs most frequently involved

Clinical Picture

The clinical picture varies with the type of trauma In tears of the mucosa alone the classic symptom is vomiting of blood Some of these cases go on to traumatic ulcer formation with secondary hemorrhages These ulcers, in contradistinction to the chronic peptic ulcer, heal exceptionally rapidly under treatment Tears involving the serosa alone or the serosa-muscularis evade diagnosis

This series of cases consists chiefly of complete tears thru all layers The usual clinical picture in these cases is not pathognomonic but presents early signs of (1) shock, (2) a perforation of the gastrointestinal tract, or (3) internal hemorrhage The common findings are pain (usually localized early in the epigastrium), abdominal tenderness and muscle rigidity, nausea and vomiting (frequently blood), together with signs of shock and collapse Of these, the most important when it is present is the vomiting of blood Another very valuable aid to diagnosis is a flat roentgenogram of the abdomen with the patient in an upright position If there is a rupture present, a pneumoperitoneum will occur and be evidenced by air between the diaphragm and the upper border of the liver This is usually present before liver dulness is obliterated

If the case does not end fatally as the result of shock and remains untreated, invariably the signs of peritonitis supervene—distention, generalized rigidity, dulness in the flanks, and obliteration of liver dulness Subcutaneous emphysema may occur in spontaneous rupture of the stomach Occasionally there will be a case which goes on to spontaneous recovery Of this series there were seven spontaneous recoveries—four of which were operated on later for complications Here there is a walling off by adhesions with either abscess formation or scar tissue stenosis of the pylorus and subsequent signs of obstruction Occasionally if an abscess or cyst thus formed is left untreated, it will rupture spontaneously thru the abdominal wall forming a gastric fistula

Treatment and Prognosis

The treatment for all cases of complete rupture is immediate laparotomy. In incomplete tears, involving the mucosa or serosa, expectant treatment (observation) is indicated. Of this series as a whole there was a mortality of 71.8 per cent. The following is an analysis of the treatment given:

Non-operated	48 cases
Operated	18 cases
Not given	2 cases
* Spontaneous recoveries	8 cases—16.7%
Operative recoveries	10 cases—55.6%

* Five of these eight cases were operated on later for complications.

Case Report

M. McA., colored, male, age forty-two, post-office employee. On Sept. 25, 1930, about 2:30 A.M. the patient and a helper were tossing mail sacks weighing about eighty pounds from the ground up onto a truck, a distance of about five feet. The end of the sack held by his helper slipped, throwing the entire weight of the sack on the patient, who tossed the sack on the truck turning his body to the left as he did so. He immediately experienced a severe pain in the upper left abdomen. He drank a cup of warm water and vomited. After vomiting, the pain became more severe. He was admitted to the hospital about 4 A.M. He vomited several times shortly after admis-

TABLE II—SPONTANEOUS RUPTURE OF THE STOMACH

Author	Refer- ence	Sex	Age	Inciting Cause	Trauma to Stomach	Operation	Time	Result	Remarks
Lantschner	13	F	72	Vomiting after eating cold meat and drinking 8 cups water and 2 cups tea.	4" rent posterior wall	No		Died 13 hrs.	
Hoffman	13	M	24	Acute dilatation of stomach	3" rent lesser curvature	No		Died	
Chari	13	F	53	Gaseous distention after hearty meal.	10 cm. rent lesser curvature at scar of old ulcer	No		Died	Subcutaneous emphysema. (No evidence of active ulcer.)
Newman	13	M	30	Distention after meal	1/2" rent lesser curvature near cardia.	No		Died 14 1/2 hrs.	Subcutaneous emphysema.
Thomson	13	F	28	Spontaneous epigastric pain while dressing	Rent lesser curvature	No		Died 35 hrs.	
Mickelitz	13	M	27	After drinking (alcoholic fluid in abdominal cavity)	6 cm. rent lesser curvature near cardia.	Yes	Within 24 hrs.	Died 27 hrs.	
Steinmann	22	F	28	Meal of sauerkraut	3" rent posterior wall	Yes		Recovered.	
Verse	23	F	32	Heavy meal after having diarrhea a few days.	Small rent anterior wall.	Yes		Died 24 hrs.	
Frubese	25	F	19	Acute distention	8 cm. rent anterior wall near greater curvature	No		Died	
Gill	24	F	16	Acute dilatation	1" rent anterior wall lesser curvature	No		Died	
Murdfield	29	M	39	Taking soda bicarb. after drinking	Rent lesser curvature near cardia.	No		Died	
Carson	30	M	20	Hearty meal	2 1/2" rent greater curvature at cardia.	No		Died 15 hrs.	
Meyer Leube	30	M	37	After eating rye bread and new beer	4" rent at fundus	No		Died 2 1/2 hrs.	Subcutaneous emphysema
Darenberger	30	M	25	Acute dilatation	Rent at fundus	No		Died 16 hrs.	
Mosnard	30	F	29	Hearty meal of sauerkraut and pork.	Serosal tears lesser curvature, mucosal tears at fundus.	No		Died 9 hrs.	
Bosch	30	F	47	Hearty meal	1 cm. rent anterior wall lesser curvature.	No		Died 3 1/2 hrs.	Subcutaneous emphysema.
Knudrat	30	F	Child	Hearty meal	2 1/2" rent at fundus	No		Died Few hrs.	

Thus we have a non-operative mortality of 83.3 per cent as compared to an operative mortality of 44.4 per cent.

Of the cases operated on, nine of the ten recoveries were operated on within six hours of the injury, the eight cases which died were all operated on within twelve hours except one. Seven of the eight deaths occurred within twenty-four hours after the injury. Sixty per cent of the deaths of unoperated cases occurred within twelve hours and eighty-eight per cent within twenty-four hours after the injury.

son to the hospital, once the vomitus was blood-streaked. He had eaten a light lunch about four hours previously and had felt perfectly well up to the time of the injury, giving no history of any previous gastric complaints. Furthermore he gave no other history of injury than the torsion of his body to the left in tossing the mail sack on the truck.

At the time of admission to the hospital, he was not acutely ill, temperature was 97° F, pulse 110, respirations 24, complained of pain in left upper abdomen, generalized abdominal tenderness most marked in the epigastrium, and left upper abdomen, slight rigidity of the upper half

of the left rectus muscle. He was given $\frac{1}{4}$ grain of morphine by hypo and rested comfortably the remainder of the night.

Sept 25, 10 A M temperature 98.6° F, pulse 75, respirations 20, resting comfortably, no vomiting, taking nothing by mouth, diffuse tenderness throughout abdomen most marked in the right lower quadrant, slight spasm of upper left rectus, no distention, no change in liver dullness.

3 P M temperature 100.0° F, pulse 80, respirations 24, leukocytes had increased to 11,000 with eighty per cent polys, abdomen slightly distended, absence of liver dullness, tenderness more marked with considerable spasm of both recti muscles. Laparotomy advised.

Operation Under ether anesthesia an upper right rectus incision was made. On opening the peritoneum there was a gush of escaping gas. Both the large and small

bowel were moderately distended and the serosa slightly injected. There was a small amount of brownish fluid in the upper peritoneal cavity. The stomach was practically empty and presented a rupture about two inches long extending downward from the lesser curvature on the anterior wall about two inches from the pylorus. This rupture extended thru the serosa and muscularis with the herniated mucosa presenting several smaller perforations. The surrounding tissue presented no evidence of any pre-existing pathology. The rupture was closed with Lembert sutures and the abdominal wall closed without drainage.

The patient made an uneventful recovery and was discharged from the hospital on Nov. 6. He was last seen in January 1935 up to which time he had been free of all gastric symptoms.

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DANGER IN STALE COD LIVER OIL

The deterioration of cod liver oil is the subject of an article by Dr. D. V. Whipple in the *Journal of Pediatrics*. He notes that heat, air, and light are the three factors which contribute to spoilage of cod liver oil and destruction of its vitamin A. Vitamin D is unimpaired by these factors.

Samples of cod liver oil from a number of institutions and homes were analyzed to determine whether or not much spoilage existed. It was found that most institu-

tions did not realize the importance of keeping cod liver oil in a cool, dark place, exposed to as little air as possible.

Reputable brands of cod liver oil kept in refrigerators at home and bought in relatively small quantities kept without any sign of deterioration.

The author believes that many of the digestive upsets of children attributed to cod liver oil are the result of a rancid product which has been given to the child.

ANOTHER KIND OF ITALIAN VICTORY

The good health of the Italian troops in the Ethiopian campaign was extraordinary, say advices from Rome. There were "few cases and few deaths" from malaria, no deaths from dysentery, no epidemics of

typhus, typhoid, or recurrent fevers, no cases of cholera or plague, few cases of beriberi and no scurvy. Sir Aldo Castellani, tropical disease specialist, is in charge of the medical service.

DIFFERENTIAL DIAGNOSIS OF CONDITIONS ASSOCIATED WITH SUGAR EXCRETION

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Of the many conditions characterized by urinary reducing substances, diabetes mellitus is the most frequent and serious, and more mistakes are made in its diagnosis than are generally realized. The mistakes are of two kinds: failures to diagnose, and false diagnoses of diabetes. They may be illustrated by recent cases.

A twenty-nine year old woman gave birth to her third child. Pregnancy, labor, and baby were apparently normal. Thirty hours after confinement the mother developed severe headache and nausea, with a severely itching skin eruption over back and buttocks, and the child developed indigestion. Examination of the mother revealed marked acidosis with blood sugar over 300 mgs. In this case a competent obstetrician failed to diagnose severe diabetes because he conjectured that the positive Benedict reactions seen in three specimens of her urine were caused by lactose.

A forty-eight year old lawyer consulted his physician about feeling tired and nervous. Finding him overweight and overworked, less food and work and more exercise and recreation were prescribed. When two weeks of this treatment proved ineffective, a vacation was ordered. Forty-eight hours later the man was found unconscious and rushed to a hospital where he responded to treatment for diabetic coma. Two specimens of his urine reduced Benedict's test so slightly that his excellent physician was sure "no one would have thought of diabetes."

A thirty-five year old engineer submitted a specimen for periodic analysis. It showed a marked Benedict's reaction, and when a second specimen showed 0.7 per cent reduction he was advised to give the reports to his physician. Shortly afterwards he reported being under treatment for diabetes. A year later his urine showed over one per cent reduction, and it appeared that after following a rigid diet for several months without much effect on the sugar in his urine he started but soon stopped taking insulin because he felt better without any treatment at all. A tolerance test was then made which turned out normal, and every-

body was happy with a diagnosis of renal glycosuria. Thereafter for eleven years the man's urine was examined at least once a year, never showing less than 0.4 per cent reduction. Last year a new method disclosed that he had fructosuria.

In line with this case, it may be noted that during the past year more than a dozen cases of pentosuria or fructosuria have come to our attention which had been diagnosed as renal glycosuria. These cases are therefore not at all exceptional. On the contrary, they are typical of similar mistakes which are made every day and which seem to be increasing in number as a by-result of the growth of life insurance, employment, and periodic health examinations.

When one looks into the cases for an explanation, it becomes perfectly clear that the mistakes are traceable directly to limitations of our clinical tests. As is well-known, our tests do not distinguish between glucose—the only sugar involved in diabetes—and other sugars that may occur in urine, not even between the sugars and numerous nonsugar substances which reduce our reagents because they happen to have an aldehyde or ketose group in their molecules. The fact that they all look just like glucose in a test tube when reduction takes place compels physicians to guess the meaning of positive reduction tests. In this situation mistakes in diagnosis are, of course, inevitable.

Reduction Rate Sugar Method

Some years ago various observations^{1, 2} suggested an inquiry into the behavior of urinary sugars under different conditions of reagents, heating, etc. The results proved very consistent, and those of an experiment with a di-sodium-di-nitro-salicylate reagent are shown in Chart I. In this experiment a number of similar samples of watery solutions of different pure

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sugars were heated with the reagent at different temperatures for five minutes. The partial reductions thus obtained were then measured and plotted.

It strikes one immediately that these curves would prevent an obstetrician from mistaking lactose for glucose, or a physician glucose for fructose because they show so plainly that lactose reduces more slowly and fructose faster than glucose. The data show the different temperatures at which the various sugars begin to reduce the reagent, and the partial reductions of the reagent by each sugar at temperatures lower than those

necessary for complete reduction. Thus, about fifty per cent of the commonest variety of pentose reduces at 30° C, while the same reductions of fructose, glucose, and lactose require considerably higher temperatures—about 55°, 65°, and 75° C respectively. When this experiment is repeated on urines instead of pure sugar solutions, the same results obtain as illustrated by the measurements of five urines seen in the accompanying table.

TABLE I—IDENTIFICATION AND MEASUREMENT OF SUGARS FOUND IN URINE SAMPLES

Temp. C	Glucose		Fructose		Galactose		Aldo-		Keto-		C
	Mg	%	Mg	%	Mg	%	Mg	%	Mg	%	
30	0	0	0	0	0	0	0	0	0	0	43
40	0	0	0	0	0	0	0	0	0	0	67
45	0	0	0.5	15	0	0	0	0	0	0	74
50	0	0	1.1	37	0	0	0	0	0	0	
55	1.0	18	1.4	47	0	0	0.3	15			89
60	1.9	33	1.8	60	0.6	15	0.8	35	2.8		
65	2.9	53			1.8	44	1.2	60			
70	4.1	75	2.5	83	2.0	64					
75	5.0	91			3.4	84	1.9	80	3.0		98
100	5.5	100	3.0	100	4.0	100	2.4	100	3.1	100	

CHART I

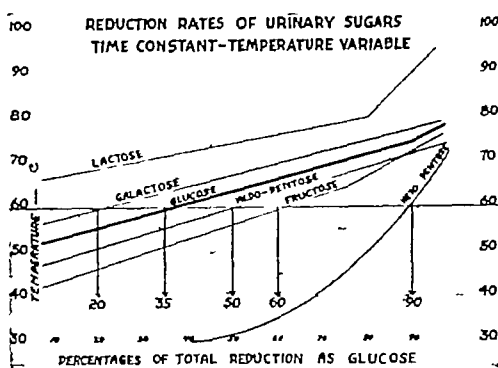
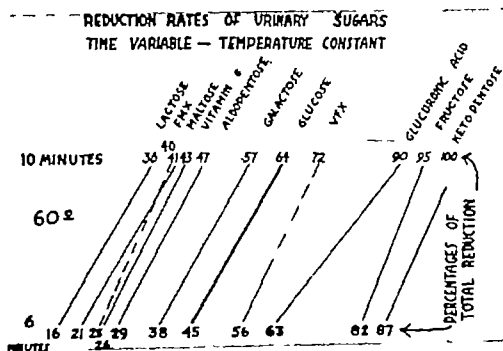


CHART II



These and other experiments prove that its partial reductions actually determine the rate or velocity at which a sugar reduces the reagent, that different sugars reduce the reagent at different rates, and that its reduction rate is characteristic for each sugar, also that the margins between their reduction rates are sufficient to identify the sugars.

In these experiments it will have been observed that the time of heating was kept constant and the temperature was variable. In attempts to apply the principle to routine work, however, it was found that similar results could be had far more conveniently by reversing this and making time variable and temperature constant. The same data obtained in this simpler way are shown in Chart II.

This chart has been employed in the routine work of the Prudential Laboratory during the past year, and besides the sugars, shows other reducing substances which are found repeatedly.

In this, like the preceding chart, it is evident that the various reducing substances are distinguishable by their reduction rates. The method is very simple and quick. A mixture of urine and reagent is divided into two equal samples. One is heated six and the other ten minutes at 60° C and the reductions

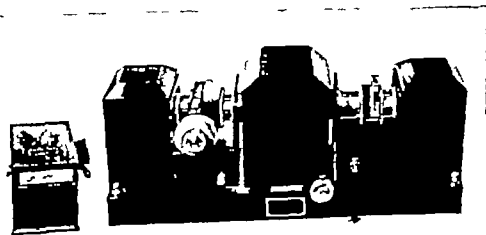


Fig 1 Electro-Scopometer

measured One of the samples is then heated five minutes at 100° C for the total reduction The measurements are made with extraordinary accuracy and ease with a universal Electro-Scopometer (Fig 1)

Opposite the Scopometer scale readings on a calibration like that shown in Chart III, the corresponding sugar values are found in terms of glucose and the six and ten minute reduction rates calculated

When the method was put into routine practice, the results proved so interesting, and in many instances so puzzling, that some system of checks or controls was indicated It was therefore run along with six confirmatory tests on a series of reducing urines from 1000 consecutive individuals These included applicants for life insurance, patrons of the Prudential Longevity Service, and employees in the care of the Prudential Infirmary i e, well and ambulant sick adults from all over the United States and Canada

Every urine received in the laboratory was tested with Benedict's qualitative copper reagent and the results rigidly interpreted according to Benedict's original directions, but only one specimen (the first) from each individual is included in the series Besides Benedict's and the reduction rate methods, the following other tests were applied to every urine phenylhydrazin test and tests for pentose, fructose, polysaccharides, and glucuronic acid

As the methods are treated in detail in another paper,³ it will be needless to say more about them here than that some of them are new and that the phenylhydrazin test was used with repeated crystallizations in this series merely to determine the presence or absence of osazones regardless of crystal form It seems anachronistic that no better clinical method now exists for differentiating between sugars and nonsugars It may also be noted that other methods like fermentation, hydrolysis, melting points of osazones, etc, were also employed in special cases

Results The Glucose Reductions

The distribution curve seen in Chart IV shows the concentrations of the reducing substances found in the thousand

specimens It is interesting to find that over sixty-five per cent of the reductions ran 0.5 per cent or less with a peak between 0.2 and 0.3 per cent The lower

CHART III

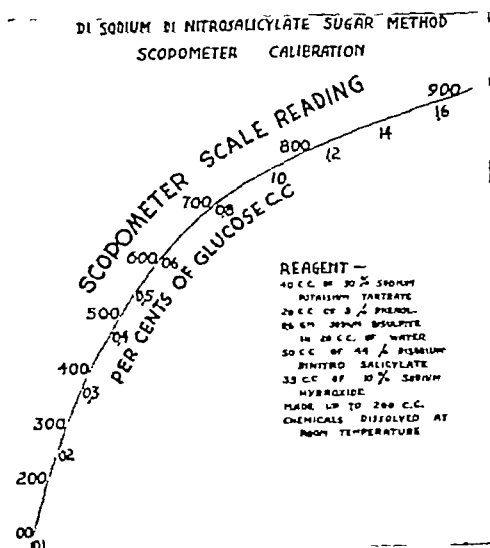


CHART IV

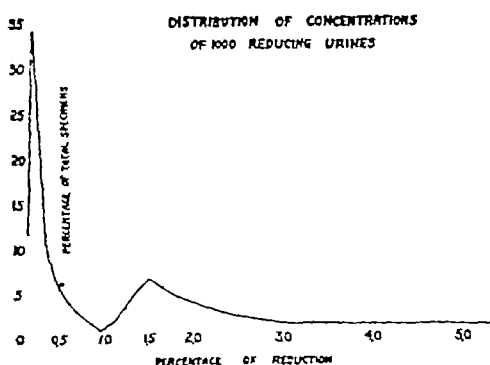


CHART V — DISTRIBUTION OF GLUCOSE AND NON-GLUCOSE REDUCTIONS

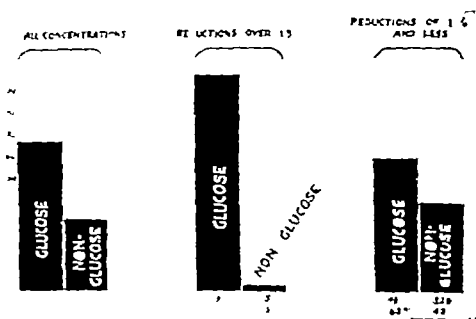


CHART VI

Responses of 10 normal males and 10 normal females (ages 19-48) to one 75 gram and two 50 gram doses of glucose. Note decline in blood sugar after second dose of glucose—no sugar in urine

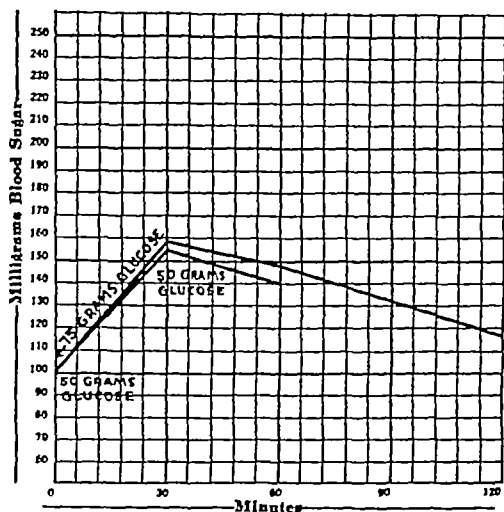
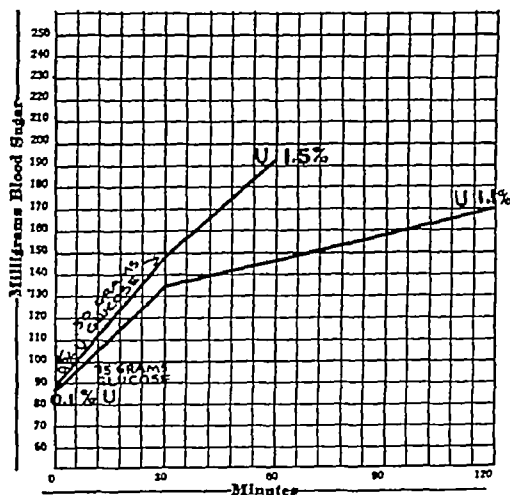


CHART VII

Mild diabetes showing atypical result of older test due to irregular absorption and typical result of new test



peak between one and two per cent probably reflects the confirmed diabetics who apply for life insurance. Separating the material at one per cent it appears that only twenty per cent of the specimens reduced more than this.

In its special relation to the diagnosis of diabetes, the material is most instructive when the glucose reducing urines are separated from the nonglucose reducing urines, as seen in Chart V.

This separation shows that while glucose caused ninety-seven per cent of the two hundred reductions which ran over one per cent, it caused only sixty per cent of the eight hundred reductions which ran one per cent or less. As somewhat over ten per cent of the glucose cases turn out to be renal or alimentary or some other form of nondiabetic glucosuria, it is evident that about half of the eight hundred urines containing one per cent or less of glucose came from diabetics and half from nondiabetics.

Since the chances of correctly guessing whether these positive reduction tests mean glucose or something else seem no better than even, it is clear that the only safe way to avoid mistakes in diagnosis is to establish the presence or absence of glucose in urines which give positive reduction tests.

At this point it may be well to emphasize that other criteria, which many seem to use, are futile. Thus, neither the intermittence nor the amount of a reduction has any diagnostic value, because many diabetics excrete sugar only intermittently while many nondiabetics excrete sugar persistently. Even more common are the mistakes which result from believing that smaller reductions point to other conditions and only the larger to diabetes, because the truth is that the slightest perceptible reduction, if caused by glucose, may be just as indicative of diabetes as the largest.

When glucose is excluded as the cause of a positive reduction test, diabetes falls out of diagnostic consideration automatically. On the other hand, when glucose is established as the cause of a positive reduction, it becomes necessary to differentiate between diabetes and the various nondiabetic glucosurias.

The One-Hour Two-Dose Dextrose Tolerance Test

For this differentiation there is no better clinical means than an alimentary glucose tolerance test, and the advantages of always making such tests promptly, particularly before beginning dietetic or any other kind of treatment are many. A newer procedure, the one-hour two-dose dextrose tolerance test,⁴ seems to be superior to older methods. It is based on the

paradoxical law of Allen "Whereas in normal individuals the more sugar given the more is utilized, the reverse is true in diabetes" Physiologists⁵ have interpreted this as meaning that the first dose of glucose stimulates the insulin-glycogen mechanism to such activity that the normal organism is then able to deal with any amount of glucose without becoming hyperglycemic, while diabetics react with distinct hyperglycemia because the insulin-glycogen mechanism fails

According to Kelly, Beardwood, and Fowler⁶

Because of its relative simplicity, its economy of time both from the standpoint of patient and laboratory, its more specific character, its avoidance of equivocal results, we are of the opinion that it will eventually replace the older methods

The more specific and sensitive results of the one-hour two-dose test are related not only to the physiology underlying the paradoxical law, but also to better adjustment of glucose to absorption rate by giving less concentrated and more digestible solutions of glucose and to the elimination of emotional and other extraneous influences by its shorter period

The test is performed by dissolving one hundred grams of glucose in about 650 c.c. of water. This solution is then flavored with lemon and divided into two equal doses containing fifty grams of glucose in about a fifteen per cent solution, which are served cold and are easy to drink within a minute. Also keep at hand three containers with preservative against glucolysis for the blood specimens and three containers for the urine specimens, making it a point when collecting these to have subjects empty the bladder as completely as possible. The following steps are taken after a fast, preferably overnight

1 Collect blood and urine (A) samples and give the first dose of glucose, allowing one to two minutes for its ingestion

2 Thirty minutes after ingestion of the glucose, collect blood (B) sample and give the second dose of glucose, allowing one to two minutes for its ingestion

3 Thirty minutes after the ingestion of the second dose of glucose, collect blood and urine (C) samples. The third urine container is given the subject for a sample of the next urine voided

When the results are plotted (Chart VI), the interpretation of the first part of the curve, that is the part which includes the fasting and thirty minute samples, is exactly the same as the interpretation of the same part of the curve of the older procedures, and the same deduc-

CHART VIII

Typical results of both tests in more severe diabetes i.e. same criteria as mild diabetes but higher sugar values related to the severity of the disease also tendency to high and changing renal threshold for glucose

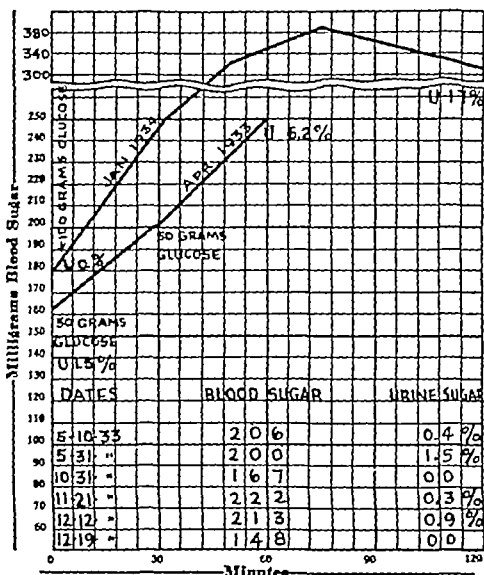


CHART IX

Renal glycosuria. Blood sugar does not reach diabetic level after second dose of glucose.

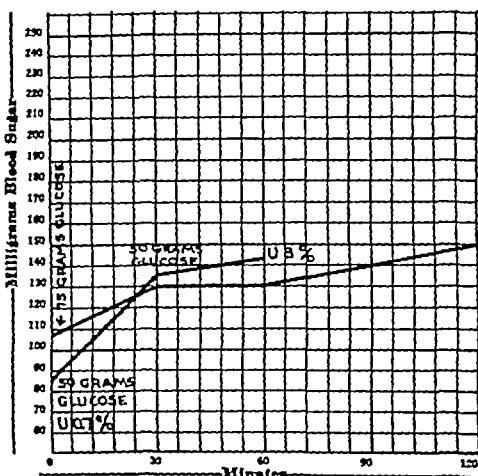
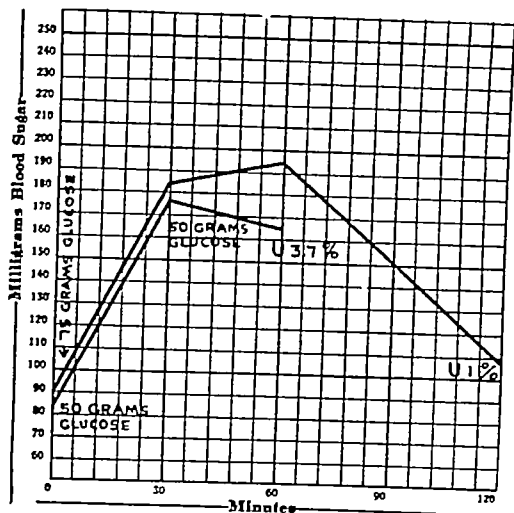


CHART X

In alimentary glycosuria there is no sugar in fast-
ing urine but definite amounts after ingestion of
glucose. The new test sharply distinguishes between
this condition and diabetes by fall in blood sugar after
second dose of glucose instead of the rise characteristic
of diabetes

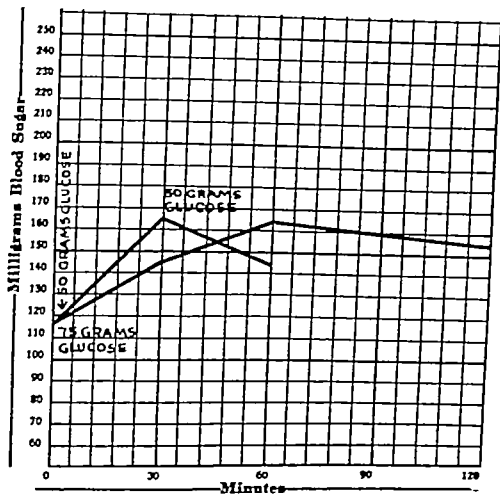


tions are accordingly drawn from the
blood and urine sugar values. The inter-
pretation of the second part of the curve,
the part which includes the thirty and
sixty minute values, is not at all like that
of the older tests, as illustrated by the
following cases

The typical criteria of normal responses
to the one-hour two-dose test are, therefore
(1) a fasting blood sugar within the normal

CHART XI

Nervous and irregular menses. Under treatment
for thyroid trouble, sugar in urine occasionally. New
test definitely excludes a diabetic tendency older test
does not



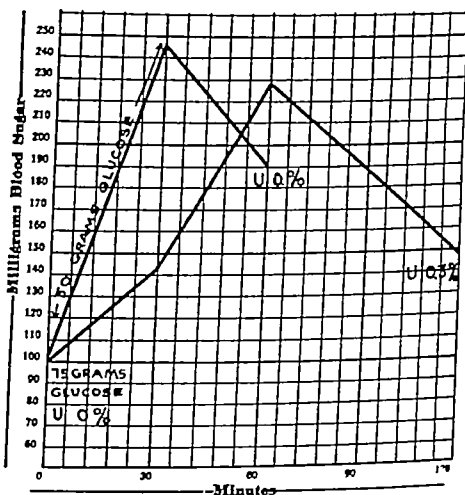
limits of the particular blood sugar method
employed, (2) a rise in blood sugar which
does not exceed seventy-five mgm in the
thirty minute sample, (3) the blood sugar
in the sixty minute sample is less, the same,
or does not exceed the thirty minute sample
by more than five mg, and (4) all urine
samples are negative to Benedict's test.

From Charts VII and VIII, it is evident
that the criteria for determining diabetes
in the one-hour two-dose test are a more
or less steep rise of not less than ten mg
of blood sugar in the sixty minute sample
following the second dose of glucose and
the relation of blood and urine sugar values
to the severity of the disease.

The criteria of the new test for renal
glycosuria (Chart IX) are, therefore blood

CHART XII

Psychic effects on sugar tolerance tests. In this
case, emotional disturbance related to secret marriage
and early pregnancy. Older test indicates diabetic
tendency new test does not.



sugars which follow the normal course, or
in any event never reach the diabetic level,
and sugar in all urine specimens

The criteria of alimentary glycosuria
(Chart X) are, therefore a sugar-free
urine after fasting with sugar in the final
urine and blood sugars that follow the nor-
mal curve even when the level is higher
than normal (Charts XI and XII)

Results The Nonglucose Reductions

With the differential diagnosis of the
glucose cases settled in the manner out-
lined, the nonglucose cases remain for
consideration. Chart XIII shows their
distribution in this series

The large number of sugar mixtures,
about one-fourth of all of the reductions

"off", as we called them when they did not point to a known reducing substance, the phenylhydrazin test gave atypical crystals which were familiar although never satisfactorily identified. In fact, a considerable conflicting literature has resulted from attempts to explain these crystals in different ways, but their identity was definitely established by experiences in the course of this study.

In running a glucose tolerance test on a case of known keto-pentosuria the fasting urine gave the reduction rates of ketopentose and the crystals seen in Fig 2A. After ingestion of glucose the urine gave "off" reduction rates and the crystals in Fig 2B. Later when the glucose was excreted, the urine again gave ketopentose rates and the crystals in Fig 2A.

The results of a glucose tolerance test on the urine of a keto-pentosuria case is shown in Table II.

TABLE II

Urine	Sugar	Excretion	Reduction Rates	Interpretation
Fasting	0.5%	150 mg/Hr	85/90	Keto-Pentose
Final	0.5%	243 mg/Hr	70/80	150 mg Pentose 93 mg Glucose

In running a galactose tolerance test on a case of suspected drug poisoning, the fasting urine was negative to Benedict's and phenylhydrazin tests. One hour after the ingestion of forty grams of galactose the urine reduced, gave galactose reduction rates and the crystals seen in Fig 3A, which were taken to be galactosazones. The urine passed during the next two hours gave "off" reduction rates and the crystals seen in Fig 3B which, it will be noted, are the same as those seen in the intermediate urine of the foregoing pentosuria case. An hour later the urine gave the reduction factors of glucose and the crystals seen in Fig 3C, which were taken to be glucosazones.

Following these experiences, tests were run on different concentrations of mixtures of pure sugars, first pentose plus glucose and galactose plus glucose, then various other sugar mixtures, and the crystals in question were easily obtained with almost all of them.

The reduction rates of extracts of some of the more common fruits and vegetables are shown in Chart XIV, and the phenylsazones obtained from the same extracts in Fig 4.

When the different extracts were fed to normal young adults, all of the urines gave "off" reduction rates and the crystals seen in Fig 5.

The reduction rates of the more popular light wines, beers, and soft drinks show other varieties of sugars. Besides these, a check-up of the materials in ordinary diets reveals an unsuspected richness and variety of carbohydrates which tend to be excreted because they do not yield their sugars readily in the processes of digestion and assimilation.

Thus, the occurrence of mixed sugars in urine may be explained in several ways. In the first place, as is well-known, nor-

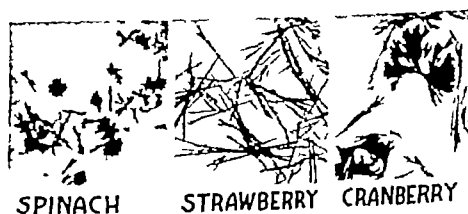


Fig 4 Phenylsazones from extracts

mal organisms utilize and store glucose to such an extent that they are able to handle almost unlimited amounts before it appears in the urine. Under usual American conditions, sugars enter the body as glucose, cane sugar or starch. Hydrolysis of cane sugar produces invert sugar, i.e., mixtures of glucose and fructose, and digestion of starch maltose. In comparison with glucose, fructose, and maltose the organism finds other sugars more or less unusable and excretes them at lower levels of concentration in the blood. The presence of sugar mixtures in some urines is therefore referable to dietary and digestive conditions.

Another explanation is not so simple because it depends on renal conditions which are not yet thoroughly understood, not even in the case of the mechanism of renal glycosuria which is only partly explained by a lower than normal threshold for glucose. In the pentosuria case it was seen that a mixture of pentose and glucose was excreted after the ingestion of glucose with no hyperglycemia to explain how glucose got into the urine. In the other case whose renal threshold for glucose could be assumed to be intact because his fasting urine was free from

reducing substances, it was seen that glucose was excreted for hours after the ingestion of galactose. Galactose appeared first, then a mixture of galactose and glucose, and finally pure glucose. Another galactose tolerance case gave somewhat different results because the first urine contained sugar mixtures and the later urine pure galactose. Cases like

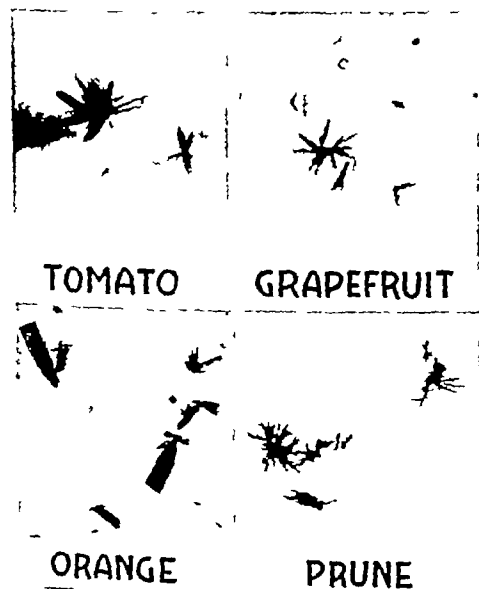


Fig 5 Phenyllosazones from urine

these raise questions of practical importance concerning renal function and pathology which our present knowledge does not satisfactorily answer, although much pertinent information is available. Thus, in flushing frogs' kidneys, Hamburger and others⁷ found the renal threshold for glucose very sensitive to differences in the composition of the flushing media which by slight alterations made the frogs'

kidneys permeable or impermeable for glucose. There are also clinical observations which suggest that individual differences in the body fluids affect the renal threshold. At the present time one can do no more than surmise that glucose, and probably fructose too, "leak" through the kidneys when unusable sugars are being excreted, and that the unusable sugars are excreted with them when glucose and fructose are being excreted. This accords with our definite impression that glucose or fructose is usually, if not invariably, one of the components of mixtures of excreted sugars. The significance of mixed urinary sugars seems therefore referable to differences in physiology or pathology as well as to dietary or digestive accidents or habits. When glucose preponderates in a mixture, however, it is safer to determine its significance in the same way one does when glucose alone is found in the urine.

Conclusions

Experience in reporting positive urinary reduction tests as glucose and other sugars (pentose, lactose, etc.), mixed sugars, i.e., nonsugars (vitamin C, glycuronic acid, etc.) and unidentified reducing substances demonstrates that it is unsafe to assume that glucose, or indeed any other sugar, is the cause of a positive reduction test, especially when concentrations run one per cent or less. A positive reduction test, therefore, calls for a determination of the cause of the reduction, and if it be glucose, for a prompt glucose tolerance test.

With such a rule of practice, the methods herein outlined make it practicable to prevent mistakes in diagnosis which were hitherto unavoidable.

135 CENTRAL PARK WEST

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ALLERGY

Perhaps nothing has given rise to more confusion than the word allergy. No two men seem to use it in quite the same way. To one man it seems to mean a sensitivity to some certain substance. To another it seems to mean every disturbance in sen-

sitivity of any sort whatever. To many others it seems to mean nothing definite but only that if they use the word, even without sense, they are keeping up with the times.—From "Progress in Diseases of the Skin."

COOPERATION OF PATIENTS IN THE EARLY DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS

JOHN H. KORNS, M.D., *Olcan*

From the Callaraugus County Department of Health

Of the many problems with which physicians are concerned none is more baffling or more intriguing to many of them than that of bringing about early diagnosis of pulmonary tuberculosis and intelligent cooperation in its treatment. Inasmuch as opportunity has been given the writer for the past eight years to study tuberculosis case histories in this county and to have personal contact with nearly all those dying from tuberculosis, it is thought that certain data may well be brought together for analysis to see what light, if any, can be thrown upon the above problems.

It may be stated at the outset that there is little ground for discouragement regarding the tuberculosis situation in Callaraugus County. The resident mortality rate from tuberculosis, all forms, decreased from 72.6 per 100,000 in 1923 to 48.5 in 1928, and down to 20.6 in 1935. The table shows that fewer cases of serious pulmonary tuberculosis are being found now than were found eight years ago, although the death rate is dropping faster than the case rate.

The table shows that about forty per cent of the new pulmonary cases found in the past eight years have been in the minimal stage at the time of diagnosis. The proportion of minimal cases from year to year has remained rather constant, while the proportion of advanced cases has slightly decreased. During these years intensive x-ray surveys of various groups have been made and a diagnostic and consultative service with portable x-ray equipment have been available throughout the county. The rapid progressive drop in the mortality rate in spite of the failure of the proportion of minimal cases to increase suggests that possibly the solution of the problem of tuberculosis eventually will lie not so much in early diagnosis as in prompt diagnosis and isolation of open cases to minimize contacts after these cases become communicable. Isolation and insti-

tutional care of open cases has been consistently practiced in this county for at least thirteen years and it is felt that this procedure is beginning to yield results. The incidence of positive tuberculin reactors under age sixteen has decreased markedly in the past eight years. On December 31, 1935 there were known to the Bureau of Tuberculosis only three positive sputum patients who were not or had not been in sanatoria. The population of the county is about 72,000.

Whether the medical profession will in the future rely chiefly upon early diagnosis or upon isolation of open cases, or upon both plans, it is certain that a large amount of cooperation on the part of the patient and the family will always be necessary. One does not need to probe into the records or into one's memory very far to bring to light numerous instances of failure on the part of patients to take advantage of all that medical science has to offer, and it is with the hope of adding to our information as to the causes for this non-cooperation that these remarks are written. They are written by and from the standpoint of an administrative officer in tuberculosis prevention and therapy.

In general the tuberculosis deaths may be considered the evidence of failure and the recoveries the evidence of success on the part of the medical profession or of the administrative health organization. This is true in spite of the fact that a fair proportion of cases die or recover regardless of the patient's cooperation in diagnosis and treatment. Therefore it is with the deaths that this article is primarily concerned.

In the past eight years there have been 146 bona fide tuberculosis deaths in the county about which fairly adequate information has been collected by the Bureau of Tuberculosis either directly or through the family physician. The term "bona fide" is based not merely upon the death certificate, which occa-

*Read at the Annual Meeting of the Callaraugus County Medical Society
Ellicottville, June 2, 1936*

sionally has been found unreliable, but upon laboratory examination or other incontrovertible evidence. Analysis of these 146 deaths from the standpoint of cooperation in diagnosis and treatment shows twenty to have had early diagnosis and reasonably adequate treatment, twenty-five to have had late diagnosis apparently due to failure on the part of the physician, forty-five to have had late diagnosis on account of delay by the patient to consult a physician, and finally fifty-six to have had fairly early diagnosis but to have failed thereafter to cooperate in treatment. Thus 101 or sixty-nine per cent of those who died

cases found in the county last year were diagnosed by physicians or referred by them directly to the Bureau's clinic for diagnosis. Sputum specimens in large numbers are submitted by physicians to the county laboratory, and nearly all of them are negative for tubercle bacilli. These facts indicate that the physicians are on the look-out for tuberculosis, although it is a disease which is becoming uncommon in this community. There is, of course, the exceptional patient who is assured by the physician on the strength of a negative sputum and x-ray film that no tuberculosis is present but who later develops definite lesions. Whether or not a definite source of exposure is known, if the patient's symptoms are suggestive, a

TABLE I—PULMONARY TUBERCULOSIS CASES DIAGNOSED IN CATTARAUGUS COUNTY 1928-1935
(All Sources and According to Stages)

Year	Minimal	Moderately Advanced	Advanced	Total
1928	29	25	30	84
1929	34 8%	20 4%	20 6%	74
1930	30	12	18	60
1931	31 2%	19 4%	22 3%	72
1932	27	23	16	66
1933	23 6%	21 9%	16 3%	60
1934	27	20	20	67
1935	20 4%	19 7%	13 7%	52
Total	221 3%	159 7%	155 0%	535

either were diagnosed late through their neglect to consult a physician or they failed to accept professional advice after a rather early diagnosis. In this connection it is frequently observed that a patient who cooperates poorly for a time after an early diagnosis will in desperation follow minutely all instructions later on when invalidism has set in. Such patients are classed here with those not cooperating.

Certain impressions are gained from this analysis.

1 Twenty patients or 13.7 per cent of the 146 died from tuberculosis in spite of an early diagnosis and reasonably adequate treatment, and it is fair to assume that some of the remaining 126 persons might not have been saved had all controllable circumstances been ideal for recovery.

2 The family physician comes in for less blame than is sometimes attached to him. It is the writer's belief that with few exceptions the practicing physicians in this county make reasonable use of modern means for diagnosing tuberculosis. Almost two-thirds of the new pulmonary

physician will do well to urge another x-ray examination soon provided symptoms continue.

3 Fifty-six, or 38.2 per cent of those who die have shown reluctance, amounting to refusal, at the time of diagnosis, to believe the doctor or to follow his advice. If to these are added the forty-five or 30.8 per cent who consulted a physician only after the disease had become advanced one finds that about seventy per cent, for one reason or another apparently failed to be convinced that serious tuberculosis was present until it had reached an incurable stage.

Perhaps the most important reason for this attitude lies inherent in the nature of the disease. Adult tuberculosis, as it is seen in this county, usually begins insidiously and the patient does not feel ill enough to consult a doctor, or, if a doctor is consulted, the patient is unwilling to consider his disease, apparently minor in nature, seriously. This has been said in various ways many times before. But after all it seems to be the one outstanding factor causing delayed diagnosis and poor

cooperation early in the course of treatment. Conversely a brisk hemorrhage, a pleurisy pain or hoarseness serves as an asset to the doctor who is urging bed rest.

In cases of mild onset, the physician first diagnosing the condition has a solemn duty to perform, and his opportunity once lost may not be grasped again by him or any other physician until too late. At the risk of losing his patient, it is urgent that the seriousness of active pulmonary tuberculosis of whatever stage be impressed upon the patient. To be sure, certain patients will resent this frankness and will consult other doctors, possibly continuing to change doctors until a verdict is rendered which pleases them, but a physician can well afford to lose such patients. Experience warrants the view that frankness is abundantly justified. Phthisiophobia in diagnosed cases, has not been, in the writer's experience, a bugbear, provided the physician-patient relationship has been one of frankness and confidence. An early conference with responsible family members in which a detailed program is outlined, may be advisable, unless the case is at once turned over to the official tuberculosis authorities for instruction and treatment. Prompt decisive action will keep some patients from resorting to chiropractors and will save a fair number from untimely death. Confidence breeds confidence, confidence cooperation.

Late consultation is due sometimes to the knowledge that tuberculosis has not been found in the family previously, and, on the contrary, sometimes to fear that it may be found and that the patient will thus be branded for life. A good many older people take pride in the fact that they have never needed a physician and this sometimes results in a late diagnosis. Occasionally a Christian Scientist comes to a tuberculosis death with a late ante-mortem or a postmortem diagnosis.

Financial considerations prevent many from curing as they should, although in New York State the provisions for free institutional care, and for the assistance of the family, are good. If health insurance or sickness benefits should become available to those whose income is too low to cover medical care, patients would no doubt submit more willingly, and with fewer financial worries, to a long period of treatment.

In what has been said no attempt has been made to deal with the patient and the family separately. Frequently noncooperation is a family and not an individual problem. In these instances the doctor needs to meet and overcome the combined resistance of family members. Sometimes a sensible nurse can help.

Some of the reasons experienced in this county for delay in diagnosis and for poor cooperation in treatment have been mentioned. Other reasons might be listed. As a rule they are found to be based upon misinformation regarding the nature of tuberculosis. Occasionally a patient, knowing essential facts, deliberately chooses a "normal life" even though it be certain to be a short one, in preference to a longer life which involves a period of cure. These instances, fortunately, are uncommon. The more hopeful and the more common type of patient is the one who lacks accurate information but whose mind is open to instruction leading to cooperative action.

In this process of instructing, the family physician's important part has already been stressed. After he has found or helped find a few cases he will be on the look-out for other suspected cases which he will want cleared up. He can be a great asset to the official agency in persuading a patient to undergo a long course of treatment and in seeing that the entire family is properly examined and protected, while the health agency often can be of assistance to the physician by providing expert diagnostic service without expense to the patient.

As for moulding the psychology of the future generation in health matters, it would seem that the very early education of children in proper social attitudes with practical lessons in cooperation with movements or organizations for the benefit of the community might be worth while. It would seem that in high school a few fundamentals regarding the transmission and the means of early diagnosis of tuberculosis could be taught. In this connection, the x-raying of high school students, while it may reveal little significant tuberculosis, has educational value, as it makes it more likely that students examined in this way will in the future submit to or even seek an x-ray examination should it seem desirable.

GALL-STONES IN THE APPENDIX

F J LENNON, M D, *Buffalo*

Gall-stones have been found in the appendix at operation on a few occasions, but the condition is so rare that in a review of the literature only three articles¹⁻³ were found dealing with this subject

The case I am reporting is of interest in that at no time did the patient have any evidence of biliary tract disease, had never been jaundiced, never had any gastric complaints or change in bowel function

He was twenty-seven years of age, of splendid physique, and never seriously ill in his life. He stated that three days before consulting me he had attended an outing at which he had eaten a large quantity of sausage and sauerkraut and consumed a considerable amount of beer. The following morning he felt somewhat sick but did not vomit. He consulted his family physician who prescribed some medicine, presumably for his gastric distress. This was followed by a bottle of magnesium citrate which produced a watery stool.

He walked into my office without assistance and did not appear to be particularly ill. His temperature was 97 and his pulse 80. He was definitely tender in the right lower quadrant and also in the epigastric region. I prevailed upon him to enter the hospital where a blood count revealed 11,000 white blood cells.

I felt that an operation was indicated in view of his continued nausea and the white count, and entered the abdomen by a right rectus incision to have sufficient space for exploration. Immediately there was presented an enormous mass which had the appearance of a large sausage. I did not recognize it as the appendix at first because of its size and appearance. Considerable fluid was found in the peritoneal cavity but no pus, and after I had satisfied myself that this mass was the appendix, the utmost difficulty was experienced in delivering it as it was gangrenous from tip to base and

bound to the pelvic wall by adhesions. It was removed without being opened and the patient made an uneventful recovery. He was discharged from the hospital on the ninth day.

The appendix was submitted to the pathologist who reported as follows:

Gross examination shows it to measure 8 x 2.3 cm. There is a very marked congestion of the superficial blood vessels. Situated in the organ are three large stones, one in the proximal end near its attachment to the cecum, one in the center, and one in the tip. In each of these enlarges is a gall-stone. The one in the proximal is smooth, round and measures 1.5 cm. in the diameter. The central one is nodular and sharp, and measures .7 cm. in diameter. The third one is black triangular and measures .5 cm. in diameter. The appendiceal wall is much thickened.

Microscopic sections show thruout the thickened wall a moderate infiltration with pus cells, which appear to be uniformly distributed thruout the wall. The serosa is much thickened and contains congested blood vessels and a moderate infiltration with pus cells.

Conclusions

It is remarkable that gall-stones of the size found in this appendix could pass through the common duct without pain. It is generally assumed that the passage of gall-stones will be revealed by cramp-like or colicky pain in the right upper quadrant, and particularly at the moment that they pass into the duodenum.

The further interesting point is that at no time either before operation or since (over one year) has he had the slightest evidence of cholecystitis or jaundice.

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Dr Alfred Salter, a medical member of the British House of Commons, recently called the attention of the Commons to the danger of automobile drivers taking any alcoholic drink whatever. Dr Salter said that all agreed that the intoxicated driver should be severely dealt with, but there was a greater danger of the subintoxicated—the man who was not drunk in the legal sense but was physiologically under the influence

of alcohol. A committee of the British Medical Association came to the conclusion that there was serious objections to the consumption of alcohol in quite small amounts by any one who had to drive a car. At least twenty-five per cent of road accidents were due to the fact that the drivers had consumed small quantities of alcohol. They were not intoxicated but, as the British Medical Association said, subintoxicated.

HORMONAL CONTROL OF THE UTERUS

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JESSIE REED COCKRILL, M D, *New York City*

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Motility of the uterus depends on three factors, namely, those inherent within *smooth muscle* itself, autonomic nervous control both extrinsic and intrinsic, and control through chemical substances circulating in the blood, especially hormones. These factors are not of equal importance. There may exist special variations as to which plays the most important and controlling role.

The uterus is an involuntary, unstriated muscle. It possesses the spontaneous rhythmic activity common to all such muscle. Like all hollow viscera it adapts itself to its contents, maintaining at all times a distinct tonus. It can be distended, thus increasing the tension within the organ. The contractions resulting from the introduction of a foreign body into the uterine cavity may not be the same as the spontaneous contractions of the uterus at rest. This is of importance, especially in view of the recent attempts to study uterine motility by means of a hydrostatic intrauterine bag. It is questionable whether such contractions exemplify the spontaneous movements that occur in the uterus. They may merely present expulsive efforts on the part of that organ to rid itself of a foreign body. There is ordinarily very little space between the uterine walls, and the introduction of a bag results in the formation of a distinct *cavum uteri*.

Studies of uterine motility have therebeen made both *in vivo* and *in vitro*. Knaus, Reynolds, Allen, and Corner have worked chiefly with the rabbit, while Robson, Moir, Knaus, and ourselves have utilized the human uterus. Knaus, Moir, and recently Watson, Wiesbader, Kurzrok, and Mulinos have studied the contractions of the human uterus *in vivo* by means of an elastic intrauterine bag. We have recently reported observations on muscle strips from more than five hundred human uteri studied *in vitro*. It might be argued that the uterine strip is

also not a true indicator of the contractions that go on in the human uterus *in situ*. The strip is severed of all nervous control. It is true that in the body the uterus is subject to both motor and inhibitory nervous influences. But, at the same time, facts have accumulated showing independence of this nervous control. Thus, in the rabbit, Rein¹ (1902) reported the spontaneous birth of young following section of all extrinsic nerves to the uterus, while Kammerster and Reynolds² recently demonstrated that the transplanted uterus is subject to hormonal control and the innervation is non-essential. Cannon et al.³ reported spontaneous parturition in cats and dogs following complete extirpation of the sympathetic trunks. J. Novak⁴ in discussing the effect of lesions of the central and peripheral nervous systems quotes numerous clinical cases from the literature showing that even very extensive lesions may have no effect on ovulation, pregnancy or labor. Parturition following complete paralysis of the lower half of the body by reason of lesions or transection of the spinal cord, proceeds very frequently with abnormal rapidity. It is our belief that the reactions of the human uterus observed both *in vitro* and *in vivo* give similar results, so that even though there are objections to either method alone, the combination of both gives us a fair understanding of some factors controlling uterine motility.

Study of the hormonal control of the rabbit uterus has yielded interesting facts which aid in our understanding of the human uterus. When these are compared with the results of study of the human uterus, however, it becomes obvious that one must be cautious in applying to one species the conclusions obtained with a different species. Some of the important results with the rabbit uterus may be summarized as follows.

In vivo experiments have shown that

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 28, 1936*

oestrin is necessary for the initiation and maintenance of rhythmic motility of the normal rabbit uterus.⁵ The rabbit uterus is refractory to pituitrin when under the influence of a functioning corpus luteum (in pregnancy or pseudopregnancy).⁶ Crude corpus luteum extracts⁷ and crystalline progesterone⁸ inhibit the estrus mobility and reaction to pituitrin. Production of a pregestational endometrium

as natural and synthetic progesterone injected into a rabbit castrated during estrus (18 to 20 hours after mating) brings about inhibition of the reaction of the rabbit's uterus to pituitrin.⁹

During pregnancy, pituitrin produces no effect upon the uterus during the early stages, but an increasingly stronger effect as the period of labor approaches. Several days following parturition the reac-

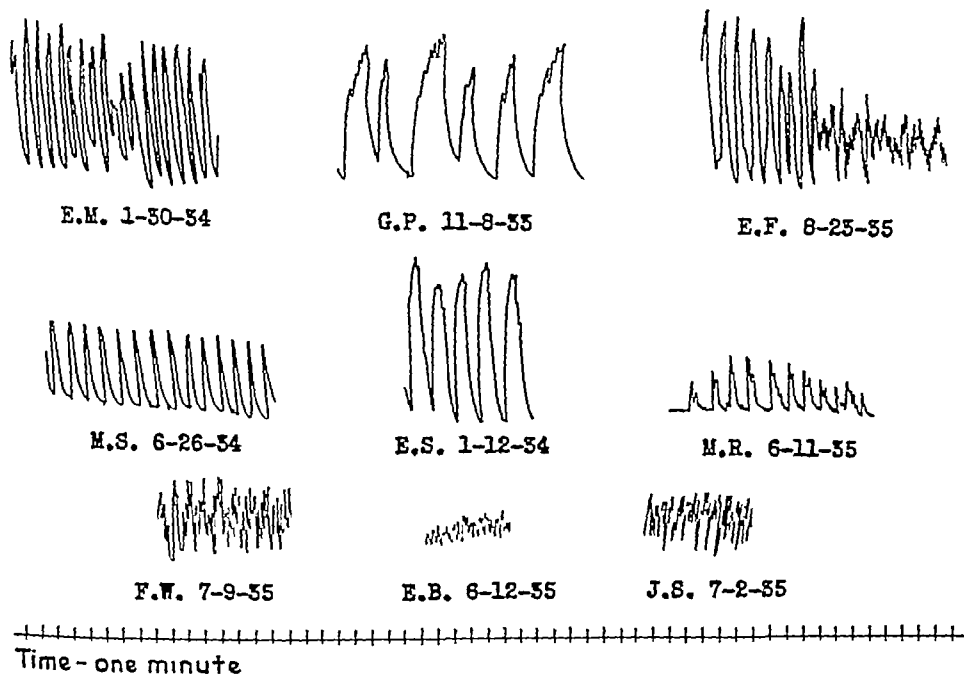


Fig. 1 Spontaneous contractions of the human uterine strips *in vitro*. E. M., sixth day of cycle, G. P., guinea pig uterus during estrus, E. F., at end of six weeks bleeding. Note spontaneous change of rhythm and character of contractions, M. S., early in cycle (before tenth day), E. S., early pregnancy (fortieth day). It is expected that the corpus luteum of pregnancy would inhibit such contractions, M. R., during menstrual period, F. W., twenty-fifth day of cycle, E. B., twenty-fifth day of cycle, J. S., twenty-first day of cycle.

and inhibition, *in vivo*, of estrous mobility are both caused by progesterone. Oestrin added to the perfusion bath in any concentration will not initiate spontaneous rhythmic motility in a quiescent uterus. This may be due to the slight solubility of oestrin in water. Castration produces a loss of spontaneous uterine contractions and a lack of response to pituitrin. Oestrin injected into a previously castrated rabbit re-establishes the uterine response to pituitrin. Corpus luteum hormone added to the perfusion fluid is without effect, probably because of its limited solubility. Impure corpus luteum extracts, as well

as natural and synthetic progesterone injected into a rabbit castrated during estrus (18 to 20 hours after mating) brings about inhibition of the reaction of the rabbit's uterus to pituitrin.⁹

The *in vitro* tests of human non-pregnant uteri that we have recently reported¹¹ have given results which do not consistently parallel those obtained with the rabbit. A review of these may be of some interest.

Before we subject the human uterine strip to the action of any chemical substance, it is essential to determine whether the strip is "alive" or not, that is, whether it shows spontaneous contractions. Strips that fail to show spontaneous contractions

at the end of one hour in the perfusion fluid (Ringer's solution) are discarded. Why some strips will not show any spontaneous contractions is, at present, unknown to us. It does *not depend* upon the phase of the uterine cycle. It may be due to excessive handling at time of operation or to the anesthesia (gas-oxygen and ether in almost all cases). As a rule adjacent muscle strips show a similar activity or lack of activity. The activity does not depend upon the length of time (up to perhaps 12 hours) the uterus has remained outside of the body

should be accepted as pharmacological reactions.

The action of crystalline oestrin or progesterin on the uterine strip has not as yet been fully studied. The reaction is limited because both oestrin and progesterone are insoluble in Ringer's solution, and the addition of a solvent greatly modified the activity of the strip.

Since the phase of the cycle when the strip is removed was known in our studies, through the menstrual history of the patient, the histology of the ovaries and the endometrium, it was possible to

Action of Pituitrin on the Human Uterine Strip

	Day of menstrual cycle																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	Beyond 29
Pit contr	1	0	0	0	0	2	4	3	4	2	2	3	5	3	2	4	4	5	3	4	4	1	1	2	2	3	3	2		8
Pit no affect								1	2							1		2			1				1					1
Pit relaxed										1																				

Fig 2 Number of uteri examined during various days of a regular menstrual cycle. None were obtained during the second, third, fourth, and fifth days of menstruation, we usually do not operate during menstrual flow.

Nor does the failure to exhibit spontaneous contractions depend on any demonstrable pathology within the uterus. Only uteri free from such lesions were used, except for a few which showed one or two *small* fibroids. Only uteri within the child-bearing age were utilized.

The spontaneous rhythmic motility of the uterine strip varies considerably. There are variations of tempo, rhythm, and extent of contractions in the different strips (Fig 1). Parallel strips from the same uterus behave similarly. When two strips from different uteri are set up in the same chamber, each one maintains its own type of spontaneous motility independently of the other. The reasons for these variations are unknown. They are independent of the menstrual phase during which the uteri are removed. Nor are they functions of the various muscle coats. In our present state of knowledge we are not justified in reading into these variations any special significance. Furthermore, one must be careful in the interpretations of the results obtained when various substances are added to the perfusion fluid. Minor variations in the course of the graph are without significance for they may occur spontaneously. Only definite and unmistakable changes

observe the reactions of the human uterine strip during the various phases of the menstrual cycle. The uterus showed spontaneous activity during all phases of the cycle (Fig 2). There was no inhibition of spontaneous motility during the corpus luteum phase, the uterus reacted to pituitrin during all phases of the cycle. In those cases (9 per cent of the series) in which the uterus did not react to pituitrin it was apparently not due to corpus luteum inhibition, for cases occurring, for example, on the eighth and ninth day of the cycle showed a typical postmenstrual endometrium.

From these facts we may conclude that the human uterine strip exhibits spontaneous uterine contractions, and reacts to pituitrin during all phases of the menstrual cycle. There is no corpus luteum inhibition. These observations do not support the contention of Knaus that during the corpus luteum phase the uterine motility is suppressed and the reaction to pituitrin absent. Hence, no conclusions can be drawn as to the time of ovulation from the reversal of the uterine reaction to pituitrin (contraction before ovulation, and no reaction after it).

We are indebted to Prof Benjamin P. Watson for constant encouragement and

advice, and for placing the large material of the Sloane Hospital for Women and the Vanderbilt Clinic at our disposal. We also wish to thank Prof. Charles C. Lieb and Michael G. Mulinos of the Department of

Pharmacology for their kind advice and assistance in both the technique and the interpretation of these results.

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BETWEEN MENTAL HEALTH AND MENTAL DISEASE

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Editorial Note Under this title will appear short summaries of "transition cases" from the service of this author in the New York Polyclinic Medical School and Hospital. The descriptions are not complete clinical studies, but will accentuate situations from the point of view of individual mental hygiene such as crop up in the every day practice of medicine

Torture

Homosexuality is one of the conditions often intimately connected with mental maladjustment. Not necessarily so, as there are many addicts to this sexual irregularity who are quite happy and contented with it and with the world. But where there is a strong inhibition a conflict results which has a detrimental effect upon the mind.

Of course, there are congenital and partly congenital homosexual individuals, but the majority of those suffering from or enjoying this aberration have acquired it, in spite of what a Magnus-Hirschfeld and other authorities might say. And in its acquired form it may be either the effect or the cause of an abnormal state akin to a psychosis. Some intellectuals and highbrow people like to coquette with it and find ready imitators among their half-baked admirers. But immense harm has been done in this way to many youths of both sexes who, if left alone, would have been plain, happy individuals, engaging in normal heterosexual life and sane thinking. Homosexuality is also spread in the so-called underworld, that is among prostitutes and their parasites, among people with low grade mentalities and among the decaying European feudal nobility and the money aristocracy in Europe and America. It is much less known to workers, whose sex life is, as a whole, cleaner and simpler than that of other social strata.

The conflict may be due either to the struggle to liberate oneself from the clutches of this habit or necessity, to a desire to be like everybody else and have a heterosexual mate, or to an ungratified yearning for homosexual relations.

The following case belongs to the latter group.

A girl is brought by her sister who is unaware of the real trouble. There are the usual complaints which baffle the family—those resembling indigestion.

The patient is "wasting away, doesn't sleep or eat." In reality she is suffering from the effects of an internal fight against the influence and impact of a strong and corrupting feminine personality, whom she has never seen, but whose acquaintance, by mail, she owes to a common friend. She wishes, but is afraid and ashamed, to submit.

The letters she receives, she says, are frightfully wearing and upsetting. They make her weak, limp and "feverish." They drag her "down and down." She is asking her correspondent faintly to cease writing, but the latter keeps blithely on as before—and our patient does not really do anything to stop her, because she secretly enjoys these love messages.

Letter after letter speaks of day-dreams about our patient, suggestive "big kisses wherever you like them most", of "oral intercourse", of "playing with myself" in front of patient's photograph, of being "in each other's arms" and of other, unprintable situations. One missive contains these sentences: "When I saw your letter my heart beat wildly, my breasts and nipples stiffened and little hot quivers ran up and down my thighs. My mind and body flamed. Do say that you understand, please, do, darling! Don't suppress your desire. You are beautiful and you have the most passionate, sensual mouth that I have ever seen."

The only way to tear the patient away from the temptation to go and meet her correspondent, the only possibility to free her from her mental torture was to show her how insincere her so-called friend was. The copious letters brought to the doctor betrayed their author, proved that this "lover" was a professional depraver of girls, that she had made other victims and, moreover, that she could not be a true "homo", as she also described her love of the male sex and her thrill at the contact with men. She wrote, for instance, about the glorious night with a young man "Cocktails, dinner, dancing, highballs no end and then, he kissed so divinely, his hot, wet lips, his hands, my fingers trembling, unfolding, caressing, squeezing, engulfing. He is such a large man. Simply huge." Then, speaking about another man "He asked me to go out with him and I accepted. I know I shouldn't, but I just cannot help it. I am sure he is aware of my desires. He is quite sophisticated and he must have noticed my lowered glances. He is so virile and athletic looking. That is so utterly visible."

I purposely fail to mention other passages. No true homosexual can write that way unless there is a studied intention to provoke and attract a person in order to reap some advantage later.

A street car motorman had had trouble with his young wife. She suffered from an attack of mental depression soon after the birth of her first child. He had to place her in a State hospital for the insane and the baby in an orphan house. Meanwhile he broke down himself. He was fidgety, sleepless, given to crying and long fits of distraction. He was "neither healthy nor sick," he said. But his condition became particularly bad when his job was changed from plain motoring to the combination of driver and conductor. He must drive, that is pay attention to his handles, to the road, to the other vehicles, to pedestrians, to lights, to stops, to starts, he must look at the hind door of his car, open and close it, let the passengers in and out through the front door, answer their questions, give them change, see that they pay fare.

Efficiency

This patient was a German and he said "I am like a *Neapolitanischer Dudelsackpfeifer*, who makes music using his hands, his feet, mouth, head, *und so weiter*."

He was unable to work, but wanted to keep his job. So I had to give him a letter to the company, his employer, worded in such a manner that his mental state should not be suspected, as that might have been misinterpreted and might have resulted in his being sent away permanently.

A vacation proved to be a blessing. But he himself could not return to his occupation, which he tried to do three times, unsuccessfully. There was too much "efficiency" for him.

Another work, this time in the car barns, was tolerable. But his real cure came only after he acquired a new sweetheart and he half forgot his wife.

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THE RIGHT WORD AT THE RIGHT TIME

There are scare-words which, when carelessly applied to a patient, make him anxious and apprehensive. And there are comfort-words, expressions which, coming from a trusted physician, banish fear. By use of these symbols the nervous system can be

played upon as though an instrument. The charlatan employs them to establish conditions which he can capitalize for his own profit. The wise doctor knows how to use them as a part of his therapy.—*Annals of Internal Medicine*

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EDITORIALS

Privilege and Duty

Only a few weeks remain for physicians to organize their political strength for effective action at the polls. After November third the officials elected to executive and legislative positions will be able to exercise great power over the practice of medicine. Now it is in the power of the medical profession to help determine who the successful candidates shall be.

The widespread interest displayed in the coming elections is a healthful sign of the vitality of democracy in this country. More than almost any other group the medical profession has a heavy stake in the outcome. Every citizen desires to see the party representing his political convictions elected. In the case of the physician, it may well be that professional independence and economic opportunity hang in the balance in the present campaign.

The election of a preponderance of candidates committed to compulsory health insurance, chiropractic or other fallacious theories would lower medical standards, weaken professional responsibility, and destroy the economic incentive to graduate study and individual research. Physicians must do their utmost to prevent such a political set-up.

Observers have frequently commented

on the large number of doctors who fail to utilize their vote. This is a sad reflection on both the civic consciousness and political realism of the delinquent practitioners. Any group which turns its back upon the ballot box should not be surprised if those elected by the ballot are indifferent to or trample upon its interests. As citizens physicians have an inescapable duty to vote. As practitioners of a profession under strong political pressure, they cannot afford not to do so.

Physicians with any professional vision will recognize that their duty—and opportunity—do not end with ascertaining the views of candidates and casting an enlightened vote. The practitioner with an eye to the public welfare—and his own—will carry the campaign to his patients and lay friends in order to organize and bring into action all the forces opposed to political and professional charlatanry.

News for Doctors

In the quarterly survey conducted by *Fortune*,¹ an extremely interesting bit of information is revealed. It is probably the first time that the public has been

¹ *Fortune*. The Fortune Quarterly Survey p 211
222 September 1936

approached to determine its attitude toward health insurance and socialized medicine. A group representative of the cross-section of our population was asked whether or not they would be willing to spend ten dollars a year to insure against possible hospital expenses. An affirmative answer was obtained from 47.9% and a negative response from 44.3%. The remainder were undecided.

Fifty-eight per cent of those questioned spent less than twenty-five dollars per annum for all medical expenses, yet this group comprised 50.8% of all those favoring the hospital plan. *Fortune* concludes from this that "for both dental and medical health insurance at ten dollars per person there would be wide acceptance." However, they overlook the fact that under the Associated Hospital Service plan which they have taken as the criterion for their question, the physicians' fee is not included in the premium. To cover this phase of health insurance would more than double the necessary outlay for each insured so that the largest proportion of the population who pay less than twenty-five dollars a year for medical care would have this figure increased.

In addition to the above statistics, seventy-four per cent were in favor of providing medical and dental care at the expense of the taxpayer for those who could not pay. Under our present system of medicine this already exists. In the large cities, free medical care is provided by direct taxation and maintenance of hospitals and health agencies. In the rural districts, the various counties have the Poor Commission which takes care of the indigent.

Any modification of our system of medical care can be made within the framework of that system as it exists today. It is not necessary to foist upon the American people types of medical practice that have, in other countries, proven inadequate. It is only active education by the medical profession that can overcome subversive propaganda.

The sooner the medical profession assumes its proper place and goes before the public, the quicker will the erroneous conception of the value of socialized medicine and health insurance be dispelled from the public mind.

A Timely Warning

The advice given by James O. Hoyle, Investigator of the State Department of Education, to the New York State Shoe Retailers Association should not be resented or ignored. In recent years there has been a growing tendency on the part of shoe salesmen to usurp titles and prerogatives which properly belong to physicians and podiatrists. Not satisfied with skill in their own trade, they are representing themselves as "foot experts." In addition to style, comfort, and durability, curative virtues are implied to reside in ordinary shoes by trademarking them with a quasi-medical name.

Such practices not only are improper and detrimental to the public health, but actually infringe the law at certain points. Many dealers are unaware of the impropriety or illegality of acts committed in common with large numbers of their competitors. Mr. Hoyle has rendered a service to the shoe industry by clarifying the statutes and defining possible infractions.

In a nation long past the barefoot stage, misrepresentation is not required to sell shoes. Beauty, durability, and comfort are all the selling points a good shoe needs. An intelligent manufacturer will attempt to make his shoes conform to the anatomical structure of the human foot. This does not justify distributors in attempting to diagnose foot ailments or cure real or imagined deformities in individuals by the prescription of shoes manufactured in the mass.

The State Department of Education has done well to go directly to the shoe industry with an explanation of the law and possible unintentional violations. The next step is strict and unrelenting enforcement.

Ozena

The exact etiology of true ozena is still unknown. Many theories have been advanced to explain its pathogenesis but none has been accepted as fully accounting for both the clinical and microscopic picture presented by this disease. In addition to the progressive atrophic change noted in the upper respiratory tract, the abnormal width of the nasal chambers which results, leads to the development of extensive crusting and offensive odor.

It is this latter symptom which leads to social ostracism of the patient and makes an introvert of him. Fortunately, however, the clinical manifestations of ozena, both the odor and the crusting, can be corrected permanently by surgical means. Based upon the assumption that the side nasal cavities plus the alteration in intranasal air currents are the responsible factors in causing excessive drying of the mucus with the formation of four smelling crusts, Lautenschlager,¹ Pollock,² Wachsberger,³ and others have devised operative means of narrowing the internal nares. By these measures the cause of the crusting is eradicated even though the underlying pathological process remains unaffected. All odor disappears and the patient no longer is compelled to shun his fellow men.

CURRENT COMMENT

"NOTED REICH DOCTOR WARNS NAZIS ON Science, Declares Their Tampering Might Wreck It" states the caption heading an article in *The New York Times* of September 23. "Dr Ferdinand Sauerbruch, noted German surgeon, issued today a warning to the political regime to let science alone unless it wants to wreck it. At the same time he warned the nation's National Socialist youth that it had better get along without an ideology for the time being and wait until it was mature enough to form opinions about fundamental questions * * *

¹ Lautenschlager, A. *Die Rhinitis atrophicans* in Denker A. and Kahler O. *Handbuch der Hals Nasen u. Ohrenheilkunde*, Julius Springer Berlin, 2 604 1926

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'Science does not need any scrubbing by outsiders. Science has always been the greatest of revolutionaries and has freed itself from weaknesses and mistakes. Science must remain true to itself * * * Science will fulfill what is demanded of it on condition that it retain its freedom and independence in its work. In spite of all necessary limitations, liberty remains an essential characteristic of science, and spiritual and intellectual freedom is a necessity for scientists. Every true scientist desires to serve his nation. His work, however, cannot be complete if it is merely a service to the nation. His research is not alone a creation of this immediate world, but it is closely related to eternal questions * * *

'Full and complete understanding of the world is a result of long labor and hard experience. This experience must be repeatedly tested by the intellect. An ideology is something that only matured and tried men and women can earn for themselves. Ideology is no affair of youth, which has instead strength, ambition, faith, and hope. These characteristics of youth degenerate, however, if it does not seek knowledge and understanding.'

"UNDOUBTEDLY DR. FERDINAND SAUERBRUCH had the support of the majority of his auditors when he told the German Medical Congress on Monday that spiritual and intellectual freedom is essential to the development of science, at the same time boldly warning the Government that the work of the scientist can never be complete if it is merely a service to the nation. This is the corollary to the thoughtful address of Sir Josiah Stamp a fortnight ago before the British Association for the Advancement of Science"—The foregoing is from an editorial in *The New York Times* of September 27, 1936 on *Science and the State*.

The editorial continues " * * * Sir Josiah's thesis was not the duty of the State to leave the scientist free. On the contrary he discussed the duty of science to guide the State and shape the social system. It is obvious, he said in effect—and in this he is echoed by the German surgeon—that science is the greatest of revolutionaries. Science does not work and develop in a vacuum, its inventions and discoveries cause profound social changes. The new question he raised is not one of restriction—like the 'ten-year moratorium' to enable society to catch up with invention—but of the obligation of science to apply the scientific method to the study of its impact on society. Is it time for science to plan a 'change absorber' to cushion the shocks and disturbances it brings about? * * *

"The social cost of scientific change is the subject of much conversation but little scientific study. A kind of twilight zone, similar to the no man's land between the functions of the State and the Federal Government, lies between workers in the field of science as such and workers in the field of sociology. Yet in this twilight zone stalk many of the crucial problems of our time. To talk of planned economy, as Sir Josiah Stamp points out, without a continual technical study of the chief factors that set the pace of change, without a 'balanced dosage' of science, is to tangle up progress in crisis after crisis. All that he says implies just the opposite of the claims of the totalitarians: the State dare not curb science, but science—the expanding knowledge of the facts of life—must guide and direct the political institutions through which human society functions."

"* * * THE SOCIAL SECURITY ACT heaps responsibility on an already overloaded profession. And it's the kind of responsibility that cannot be dodged. Intelligent physicians, acting both individually and through their societies, have injected themselves into the program instead of standing by and clucking dismay at the damage it may do them. Maternal welfare, public health, and medical economics committees are cooperating with state agencies that control the services to be rendered under the Act. They have placed themselves in a position at least to curb, if not prevent, undesirable outcomes. What is your society doing about it—and you?"—*Medical Economics*, September, 1936

AN ADMONISHMENT WELL WORTH QUOTING is contained in the *St. Louis County Medical Society Bulletin* of September 18, 1936, to wit: "Every once in a while we read in the newspapers of somebody lifting the entire thought of an article and using it as their own brain child, to their own confusion and embarrassment when it becomes known later that they did not actually write the article or story. * * * We are afraid that some of our good medical editors do not observe enough care in their clipping from other medical bulletins. They fail to give credit to the original publication or author and print the article as though it were their own. This is probably done because of either ignorance or of carelessness, but it should not happen. * * *

"When I read my article in some other bulletin without any credit or even 'exchange' at the close of the article, I immediately question every other article in that

publication. If all of the other editors see the article in our bulletin and a month later see it in some other bulletin without distinguishing mark of authorship, they also feel some doubt as to all other articles in the publication. Let all editors of *Medical Society Bulletins* be more careful in giving complete credit to all articles from other publications, so that no stigma may be cast upon any of our editors. It is a good habit and may save very much embarrassment sometime."

"* * * INCIDENTALLY, WHATEVER MAY BE ARGUED against the League of Nations, it may be said that its existence has been justified by the splendid work done by those in its service in preventing disease."—An opinion voiced by the editors in *Medical Record* of September 16

"THERE WILL ALWAYS BE PITY for those whom floods pursue, and callousness, in the long run, for the victims of misfortune man makes for himself. Yet only mankind can destroy mankind. Floods will not be man's mortal fate"—Dorothy Thompson in the *New York Herald Tribune*.—The quotation is taken from the columns of the September issue of *The Survey*. The following selection is from the same source: "Man incessantly seeks to compromise with his conscience or with his innate humanitarianism, by rationalizing his predatory behavior."

He insists upon playing the game, not only with an ace up his sleeve, but with the smug conviction that God has put it there.—Prof. Earnest A. Hooton, Harvard University * * *

"* * * ADVOCATES OF STATE MEDICINE have wept long and bitterly over the death rate among industrial workers (the group to which their theories chiefly apply). They have held up the 'shocking facts' as proof conclusive of need for change. But recently the lie was thrown squarely in their teeth."

"The Metropolitan Life Insurance Company handles a large proportion of the industrial insurance of the nation—insurance purchased by the same class of citizens who propagandists would lead us to believe are dying like flies because of lack of medical attention."

"Contrasting the health of the 17,000,000 industrial policyholders during the first half of 1936 with that of the general population, statisticians of the company report that deaths among the insured group came within one-fourth of one per cent of the all time low established during the first six months

of 1935, while the mortality record of industrial employees as a whole is substantially better than that of the rest of the population

"This is something to think about, for from the U S Bureau of the Census comes the disclosure that the average span of life is a decade longer today than it was at the turn of the century. This progress, the

Bureau states, is due largely to advances made in the science and practice of medicine and surgery

"When national health is at its best and when our health standards are the envy of the world, crying propagandists take on a strange resemblance to crying crocodiles"—William Alan Richardson in the September issue of *Medical Economics*

TAKING THE X OUT OF X RAY

The "x" in x-ray was put there because the ray was an unknown quantity, and even now, when we think we know pretty much all about it, its dangers are directly due to what the people who handle it don't know. The layman who tries to make x-ray examinations may be a good technician, but he is not a medical man, and is not qualified to interpret the pictures he takes. Equally, too, the doctor who owns an x-ray machine may have the highest medical skill, but may lack a thorough knowledge of his apparatus, unwittingly injure his patient, and let himself in for a heavy damage suit. So there are still several "x's" in this mysterious ray.

An interesting article from the Special Committee of Radiology, in *The New York Medical Week*, says that "the Committee feels that roentgenology is a form of medical practice," and goes on

The layman does not have the adequate training necessary to do this type of practice safely and efficiently. X-ray diagnosis involves far more than photography. A thorough knowledge of pathology and manifestation of disease is essential. Only a medical training can give this. The physician who refers his x-ray cases to laymen bears a heavy responsibility to the profession at large, the future efficiency of the radiologist and, above all, the welfare of the patient.

The Committee is also of the opinion that those physicians who use x-ray apparatus should have sufficient knowledge to operate and keep such machines in a manner to insure the maximum safety to the patient. There are undoubtedly many installations now in operation which are potentially dangerous but could be corrected by minor adjustments.

The harmful effects of inefficient x-ray work divide themselves into two general groups: diagnosis and therapy. In diagnosis, there is always the danger of severe electrical shock or death in open installations, that is, where the high-tension wires are exposed. The installing of shock-proof equipment will, of course, considerably reduce this danger but not entirely eliminate it. There is also the possibility of giving an overdose of x-ray with the production of an x-ray dermatitis. An x-ray dermatitis in diagnostic work almost invariably results in a heavy law suit. The dangers of unskilled application of therapeutic x-rays are even greater. Serious and permanent damage and even death may result from unskilled therapy. This is well

illustrated in the terrible disfiguring end results of epilation by x-ray as carried out in certain beauty parlors. The resulting after effects are not only disfiguring but a particularly vicious form of carcinoma is apt to occur at the site of the dermatitis.

The Editor of *The New York Medical Week* reinforces this report with a thoughtful editorial, remarking

Patients requiring radiological service run a more than average risk unless they fall into expert, conscientious hands. Poor equipment adds to the dangers of mediocre or insufficient training. The good craftsman in every field employs fine tools and keeps them in order. So the qualified specialist in Roentgenology almost always has the best machines, with maximum safety devices. In commercial laboratories run by lay technicians, on the other hand, cheap installations are common, inspection infrequent. The operators either do not know or are indifferent to the dangers to which faulty apparatus subjects the patient.

If radiology consisted solely of photography there would be some excuse for the independently practicing technician. Accurate x-ray diagnosis demands a thorough understanding of pathology and its radiographic manifestations, however—knowledge that is supplied only by medical training.

The possession of a doctor's degree does not qualify a physician to practice radiology without further preparation. In addition to his general medical education he must understand the nature and effects of the Roentgen ray and the structure (with its attendant hazards) of the x-ray apparatus. Over and above all this there must be skill in the operation of the machine, ability to interpret fine details on the plate and judgment in the application of therapeutic dosage. If the average physician is not ready to engage in radiology without special training, how much less so is the lay technician.

The slightly lesser costs of lay service do not compensate for the risks run or the uncertainty of diagnoses made by technicians without professional training. The public does not realize this, however, and the cut rates advertised by many commercial laboratories are a source of destructive competition to the competent specialists who are seeking to advance the science and practice of radiology at the same time that they must earn a living. Practitioners who have occasion to employ x-ray aids to diagnosis or treatment should bear professional standards as well as price in mind and confine their patronage to qualified medical radiologists.

DISTRICT BRANCHES

Fourth District Branch

The thirtieth annual meeting of the Fourth District Branch took place in the State Normal School at Plattsburg, opening Friday October 2, and closing the next day, with an evening dinner session at the Hotel Cumberland on Friday.

The first scientific session opened with a paper on "Treatment of Burns" by Dr Lyman Allen of Burlington, Vt. Dr Allen compared the two most recent treatments by tannic acid and one per cent of aqueous solution of gentian violet, both of which have proven of so much greater value than former methods. He cited experience to show that gentian violet is even better than tannic acid in that it is less toxic, gives greater relief of pain, forms a more flexible covering, and allows earlier skin grafting.

Dr James B Collip of Montreal, described with lantern slides the difficulties of applying newer laboratory research data in endocrinology in clinical work, particularly in the realm of different hormones formed by the pituitary.

Dr Edward K. Cravener of Schenectady discussed the problems of "Hip Joint Disease in Mid-childhood" from the angle of etiology and treatment with lantern demonstration of x-rays and diagrams.

At the dinner session the retiring president of the Branch, Dr John P J Cummins of Ticonderoga first called on the Secretary of the State Society, Dr Peter Irving, to speak on Society activities. Dr Irving stressed the point that these are stirring times for medicine, in this country, when the research impulse is at its highest, yet schemes are in the air that it is feared may not only make delivery of the best in practice more difficult but perhaps choke down research. He described the State Society mechanism as more than usually well-adjusted to meet the challenge.

Dr Lawrence, Executive officer announced that the Department of Education had taken formal action in the matter of licensing foreign physicians in the following terms:

Voted, that on applications filed after October 15, 1936 no license issued by a legally established board of examiners in any foreign country shall be indorsed, pursuant to the provisions of Section 51 of the Education Law, until the applicant shall pass the licensing examination prescribed by law or Regents' rule.

Fifth District Branch

The meeting of the Fifth District Branch convened at the Rome State School on October 1, where four speakers described different phases of the work of caring for the 3600 mentally defective inmates. It was

Dr Floyd S Winslow, President of the State Society, described with pictures some of his actual experience as Coroner's Physician of Rochester, in fatal criminal cases. The presentation indicated the foundation of the crimes in psychoses and other personality disorders, and revealed in most interesting fashion the smallness of clues that led to solution of the problems involved.

Dr John B Wheeler of Burlington, Vt. a graduate of Harvard in 1878, recited reminiscences of his experiences as a surgeon before the days of Lister, when the cause of wound infection was unknown, and the technique practiced led to such a large incidence of wound infection that none dared enter a body cavity of the skull but confined operations to the extremities.

Concluding the meeting on Saturday, Dr Arthur J Norvald of Saranac Lake spoke to the title of "Pulmonary Response to Inhaled Dust." He defined silicosis in part as "a chronic condition of the lung caused by prolonged inhalation of high concentrations of fine silica dust (microscopic particles) producing nodules of fibrous tissue in the walls of the air cells." With slides, he demonstrated the difference between benign pneumoconiosis and destructive silicosis.

Dr Lewis M Hurxthal of Boston read a paper on "Recognition of Early Congestive Heart Failure and Treatment." His presentation was of an informal type but very practical.

Dr George Beilby and Dr John C Mc Clintock of Albany spoke on "Hypertthyroidism in Children."

At the business session of the Branch the following officers were elected for 1937-8: *President*, Carl R. Comstock, M D, Saratoga Springs, *First Vice-President*, Sylvester C Clemans, M D, Gloversville, *Second Vice-President*, Elmer H Ormsby, M D, Amsterdam, *Secretary*, William W Woodruff, M D, Saranac Lake, *Treasurer*, John Edward Free, M D, Ogdensburg.

The Branch went on record formally as in favor of promulgation by the Commissioner of Labor of the same fee schedule for the rest of the state outside of New York City as has already been set for the metropolitan area for Workmen's Compensation.

brought out that with a personnel of only about 600 this difficult and many-sided work has, for long, been carried out in such fashion as to make the most of each individual under care. Marjorie S Brulle, sociol

worker, spoke of the constant need for interpreting to families the handicaps found

Dr Leonora L. Greenman, pediatrician, showed cases exemplifying malnutrition of defective infants and a group of cretins of varying ages. Ralph A. York spoke of the difficulty and uselessness of trying to teach certain of the defectives to read and work, although, because this is a "school" parents expect just that impossibility. Dr Ward W. Willis, clinical director, reported results of long-continued work with certain defectives which has resulted in production of effectual helpers in and out of the institution. He emphasized the fact that these successes were attained not only by careful estimates of capacities but also by the exhibition by those in charge of affection for the individuals.

Wm Robert Dineen, attorney, of Syracuse gave an interesting discourse on causes for malpractice suits.

Dr Irving and Dr Lawrence spoke briefly of the activities of the different committees

of the State Society. Pneumonia control, syphilis control, child welfare, and maternal welfare were described as receiving particular attention. The need for county societies to complete their lists of qualifications of physicians to do compensation work was indicated, the arrangements for arbitration of disputed bills and "lifting" complaints was described. The failure of the Commissioner of Labor, as yet, to promulgate a fee schedule for the state outside of the metropolitan area was voted, and in this connection, the Fifth District Branch went on record as approving the extension of that schedule through the state *without reductions*.

In the afternoon session Dr Donald Guthrie of Sayre, Pa. presented an interesting paper on the present status of "Surgery in Peptic Ulcer," its unwisdom at times and its real need at others. Dr Edwin P. Mayard of Brooklyn gave a paper on "Cardio-Vascular Syphilis."

Seventh District Branch

The thirtieth annual meeting of the Seventh District Branch was held at the Willard State Hospital on September 24, Dr Thomas W. Maloney, president, in the chair. The attendance was about 200.

At the morning session four State Society officials gave addresses. President Winslow spoke to the theme of "Progress of the Society" clearly defining "the doctor's obligation" to provide the public with the best medical care and to protect the public from inferior care. Dr Kaliski, as Director of the Committee on Workmen's Compensation, detailed recent setting up of procedures for arbitration of disputed bills and of "lifting charges." Dr Elliott, chairman of the Committee on Economics discussed the problems of "hospital care" versus "medical care," and the continued opposition to compulsory

health insurance. Secretary Peter Irving indicated that the Secretarial office and the JOURNAL desire closer knowledge of County Society problems.

The scientific papers were begun in the morning and concluded in the afternoon session. Dr Arthur Krida of New York, Chief Orthopedic Surgeon of Bellevue Hospital described surgical procedures and results of operation on knee-joints damaged by arthritis. Dr Edward E. Winkler of Buffalo gave moving pictures of "Miscellaneous Office Procedures in Gynecology" and of the technic of the "Watkins Interposition Operation." Dr W. S. Merle Scott of Rochester pointed out the various points that assist in differentiating malignant from benign ulcerative lesions of the gastrointestinal tract.

DR JIM," HEALER FOR A MILLION ZULUS

"Dr Jim," physician over thirty-five years in Durban, South Africa, has arrived home, says the *Boston Transcript*. In Africa where he founded the first hospital for Zulus in 1899, that is his title. His hospital is "House That Jim Built," and his wife, a trained nurse, is "the Princess." His New England friends who were skeptical when he left here as a young missionary doctor, knew him as Dr James B. McCord of Oakham Mass. "There is only about one

doctor to every million people in Africa," Dr McCord informed us. To meet this great medical need, Dr McCord is training the black to care for his own, as well as relieving sickness and suffering in his hospital. Last year, after a seventeen-year struggle, Dr McCord induced the South African Government to put through a plan whereby young Zulus will receive medical education in the South African Native Colleges.

TWO MORE GUESSES

Excited young father "Quick! Tell me! Is it a boy?"

Nurse "Well the one in the middle is"—
Illinois Medical Journal

COMMITTEE ON ECONOMICS

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DIAGNOSIS OF FUSOSPIROCHETAL INFECTIONS

Fusospirochetal infections which occur in man are caused by a synergistic group of spirochetes (*Borrelia* and *Treponema*) and fusiform bacilli. In the majority of such infections other organisms such as streptococci, higher bacteria, and vibrios are also present. The lesions, regardless of their location in the body, are characterized by local necrosis, ulceration, and putrid odor. Patients with fusospirochetal infections may have generalized symptoms, slight to very pronounced, due to absorption of toxic products.

There are four locations in the body where this combination of microorganisms is thought to occur under apparently normal conditions: 1 Crypts of tonsils 2 Gingival margins of teeth 3 External genitals 4 Intestinal tract. Thus, any lesion of a mucous surface may contain spirochetes and fusiform bacilli without causal relationship.

Lesions incited by these microorganisms are usually located in or near the above mentioned areas. It is not unusual, however, for remote parts of the body such as the lungs or brain to be affected. Infections of wounds, especially following human bites, are not uncommon.

The following are laboratory aids in diagnosis:

I Tonsil and Throat Lesions (Vincent's angina, ulceromembranous pharyngitis) Swabs may be used to collect material from the ulcerated areas. They should be taken directly to

the laboratory and a dark-field study requested. This is the best method for the identification of the entire flora. It is essential, however, that the material be fresh. If this is not practicable, films should be made on clean slides, allowed to dry in the air, and then sent to the laboratory with a request for the examination desired. Appropriate specimens should also be submitted to exclude the diphtheria bacillus but such a culture is not suitable for examination for organisms of the fusospirochetal group. A differential white-blood-cell count is desirable since similar lesions may be associated with agranulocytic angina or leucemia.

II Trench Mouth or Ulceromembranous Gingivitis Material from the ulcerated areas may be collected on swabs and treated as under I.

III Lung Lesions (bronchial spirochetosis, lung abscess, empyema, or lung gangrene) These conditions may be caused by members of the fusospirochetal group. The sputum, pus, or material from an empyema should be sent immediately to the laboratory for examination.

IV Foul ulcerated lesions in other parts of the body, particularly the genitals or infected wounds resulting from human bites, should be studied for the fusospirochetal group. Capillary pipettes or swabs may be used to collect material for dark-field examination and for slide preparations. Here again it is essential that the material be moist when received at the laboratory.

Laboratory studies are of particular value in these infections because some of them respond readily to immediate and appropriate treatment.—Issued by The New York State Association of Public Health Laboratories, Leaflet No 8

COMMITTEE ON WORKMEN'S COMPENSATION

It has come to the attention of this Committee that certain physicians in the metropolitan area of the State, qualified under the Workmen's Compensation Act, have been requested to treat claimants under the Workmen's Compensation Act without reporting the injury to the Department of Labor as prescribed by the rules and regulations.

Physicians should be careful not to undertake the treatment of a claimant under the Act without making the necessary reports as prescribed by law. Under no circumstances should any physician agree to treat such claimant at the request of an employer without notification. This is a violation of the law, for which all parties concerned will be strictly accountable under the provision of the Labor Law and of the amended Workmen's Compensation Act. Instances of attempts to induce physicians to treat cases without reporting them should be brought to the attention of the Workmen's Compensation Boards of the County Medical Societies at once.

It is again requested that all physicians

pay particular attention to Rule 23 of the rules and regulations promulgated by the Industrial Commissioner covering the amended Workmen's Compensation Law. These rules and regulations are printed in the fee schedule pamphlet. Rule 23 makes it obligatory on the part of a physician superseding another physician in the treatment of a patient, before beginning the treatment of such patient, to make a reasonable effort to communicate with the prior attending physician to ascertain the patient's condition, to advise the prior physician of the name of the patient who wishes his attention, and to give the reasons for the patient's seeking another physician. If the superseding physician cannot contact the prior attending physician after a reasonable time and, if the claimant's condition requires immediate attention, the superseded physician should be advised by the doctor taking over the case within 48 hours, of the above facts.

DAVID J. KALISKI

Chairman

IMPORTANCE OF PRESCRIPTION WRITING

This is stressed in the *Journal of the AMA* by Dr. E. Fullerton Cook. The prescription written for the individual patient, he says, is an important link in a perfected service. An original prescription shows evidence of professional skill and is not a product with which the patient is already familiar through its display in the type of medicine store where no professional knowledge is present and where such standards must necessarily be low. The latter situation is worthy of serious consideration, for the patient is likely to question the justification for a doctor's fee when it results in what may appear to be a "patent medicine" type of treatment. The use of abbreviated official titles written into a prescription and with a "non rep" order controls the situation, while the suggestion to "buy it at the drug store" opens wide the door to self-medication.

Further, the author emphasizes the restriction of routine hospital treatment to official medicines whenever possible. This program for the hospital has within it another possibility of far-reaching significance. It is realized that the medical student has little

opportunity in his crowded curriculum to become familiar with official titles or even to gain practice in prescription writing. This is being recognized by a number of hospitals, and both medical and surgical interns are being given regular training in the use of official medicines and in prescription writing.

The price of a prescription is no small item for consideration in the total cost of medical care. It should be the basis for a complete understanding and must be established on a sound and economically correct foundation. It is proper that the patient should pay for the medicine and that it should not come out of the physician's fee, for that is not economically sound and leads to numerous abuses.

Many physicians today are being persuaded to start the practice of office dispensing. There are conditions in which this is justified, as in a country district where there are no prescription-filling facilities, but that it introduces the possibility of many complications must be conceded, and most physicians return to prescription writing as soon as financial pressure is relieved.

One of the city ambulances of Evanston, Ill. is to be equipped with short wave transmitting and receiving apparatus to enable the ambulance doctor in emergency cases to report the needs of the patient to

the hospital authorities with dispatch. This will permit preparing the operating room before the return of the ambulance or the sending of such other assistance as may be necessary.

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Chairman

IMPORTANCE OF PRESCRIPTION WRITING

This is stressed in the *Journal of the AMA* by Dr. E. Fullerton Cook. The prescription written for the individual patient, he says, is an important link in a perfected service. An original prescription shows evidence of professional skill and is not a product with which the patient is already familiar through its display in the type of medicine store where no professional knowledge is present and where such standards must necessarily be low. The latter situation is worthy of serious consideration, for the patient is likely to question the justification for a doctor's fee when it results in what may appear to be a "patent medicine" type of treatment. The use of abbreviated official titles written into a prescription and with a "non rep" order controls the situation, while the suggestion to "buy it at the drug store" opens wide the door to self-medication.

Further, the author emphasizes the restriction of routine hospital treatment to official medicines whenever possible. This program for the hospital has within it another possibility of far-reaching significance. It is realized that the medical student has little

opportunity in his crowded curriculum to become familiar with official titles or even to gain practice in prescription writing. This is being recognized by a number of hospitals, and both medical and surgical interns are being given regular training in the use of official medicines and in prescription writing.

The price of a prescription is no small item for consideration in the total cost of medical care. It should be the basis for a complete understanding and must be established on a sound and economically correct foundation. It is proper that the patient should pay for the medicine and that it should not come out of the physician's fee, for that is not economically sound and leads to numerous abuses.

Many physicians today are being persuaded to start the practice of office dispensing. There are conditions in which this is justified, as in a country district where there are no prescription-filling facilities, but that it introduces the possibility of many complications must be conceded, and most physicians return to prescription writing as soon as financial pressure is relieved.

One of the city ambulances of Evanston, Ill. is to be equipped with short wave transmitting and receiving apparatus to enable the ambulance doctor in emergency cases to report the needs of the patient to

the hospital authorities with dispatch. This will permit preparing the operating room before the return of the ambulance or the sending of such other assistance as may be necessary.

SUB-COMMITTEE ON THE DEAF AND HARD OF HEARING

Contemplated Program of the Sub-Committee on the Deaf and Hard of Hearing Cooperation of all members of the Medical Profession in the State of New York is earnestly sought by this sub-committee in order to carry out the following objectives: To raise the standards of otological care of children in the schools for the deaf which will include Working for earlier admittance to the schools, a visiting otologist for each school and a program for the non-placement of children with hearing impairments in these schools for deaf children. Much has been achieved during the past three years in raising the standards of care of the deaf children, but there is much more to be desired.

The Conservative of hearing of all school children in the State by obtaining for them, proper and necessary education and otological care. Hearing impairments must be discovered early if they are to be properly treated and hearing losses arrested. Legislation recently enacted provides for the early discovery of hearing losses through scientific methods. Recent legislation also provides for reporting by parent, or guardian or physician of the young deaf or hard of

hearing child under six years of age to the State Department of Health. Proper recommendations are then made to the child's parents for medical and educational care. This will insure the early discovery of deaf or hard of hearing children and with proper placement in a deaf school or educational care in the public school, much will be accomplished.

We have yet to provide for adequate educational care in the way of lip-reading instructions for the child with varying degrees of hearing impairments in our public schools. The Committee is also endeavoring to spread information regarding educational opportunities, recent developments in scientific hearing tests, and in the early diagnosis and care of infected ears or hearing losses caused by obstructions. Each County Medical Society is earnestly asked to cooperate with the Sub-Committee in their efforts to conserve hearing in the children of the State.—New York League for Hard of Hearing, 480 Lexington Ave., New York City

AUGUSTUS J. HAMBROOK, M.D., *Chairman*

LEO M. SCHIFF, M.D.

ESTELLE E. SAMUELSON, *Secretary*

PRO AND CON

The Kentucky State Department of Health has issued a ruling, prohibiting the use of graduated prescription bottles in which the graduations are blown into the glass. It has been found that not infrequently in the case of such bottles the volume of content has no relation to marking.

The Department of Forensic Medicine of New York University has been reorganized under the direction of Dr. Harrison Martland, who succeeded Dr. Charles Norris as Professor of Forensic Medicine in January 1936. In addition to undergraduate work, the department has developed graduate instruction leading to the degree of Med Sc D and short, intensive courses in specialized branches of medicolegal work. The Charles Norris Fellowship in Forensic Medicine has been established which is open to candidates applying for work toward the degree.

Six times as many patients sued their doctors in 1935 as in 1921, and recent figures indicate that in 1936 approximately one doctor in twenty will be a defendant in a malpractice trial, says Henry Morton Robinson in *The American Mercury*. At the same time, however, although the volume of

such litigation is increasing tremendously, less than one-tenth of it is successful. The patient rushes in with his grievance, sincere or otherwise, but nine times out of ten he retires with nothing tangible except the cost of a lawsuit.

One thousand Jewish doctors, representing a sixth of the total, departed from Germany during 1935, according to figures made public by the Joint Distribution Committee. The committee also reported refusal of licenses of young Jewish doctors in Germany. Also

There is no longer any chance of access for young male students to the universities, since in order to matriculate one must give proof of having done "work service," from which Jews are excluded.

Figures made public show that there is less than one in one hundred Jewish doctors under thirty-five in Berlin. Exactly 35.9 per cent of all Jewish doctors in Berlin are over fifty-five. Identical conditions prevail elsewhere in the country, with the average age of those remaining "constantly rising."

"There's that man who's always giving women something to talk about."

"A scandalmonger, eh?"

"No, a surgeon"—*Portland Press Herald*

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested

Albany County

THE SEPTEMBER MEETING of the Medical Society of the County of Albany was held in the Auditorium of the Albany College of Pharmacy, September 30

The scientific program "*The Part of the General Practitioner in the Syphilis Control Program*," by Dr Earl D Osborne, Professor of Dermatology and Syphilology, University of Buffalo, Buffalo

Bronx County

DR. HENRY FRIEDLAND, Secretary, reports that the regular monthly meeting of the Bronx County Medical Society will be held at Burnside Manor, 85 West Burnside Avenue, October 21, at 8 30 P M

The program follows

Address of Retiring President, Milton Goodfriend, M.D

President's Inaugural Address, Clarence O'Connor, M.D

"Committee on Trends and Medical Practice of the N Y State Medical Society," Terry Townsend, M.D

"The Doctor and the Public," Mr Dwight Anderson.

"The New York State Journal of Medicine," Peter Irving, M.D

"The New York State Medical Society," Floyd Winslow, M.D

DR. GEORGE FRANCIS PATTON, a specialist in diseases of the eye, who won the Croix de Guerre in the World War as a lieutenant, medical corps, with the 165th Infantry, in France, died suddenly on September 14 of a heart attack at his home, 2,123 Bathgate Avenue, the Bronx. He was forty-nine years old

Dr Patton was educated at St. Ann's Academy, Fordham University and the Medical School of the University of Maryland, where he received his M D in 1910. He was on the surgical staff of the Bronx Eye and Ear Infirmary and an honorary surgeon of the New York Police Department.

Early in 1918 Dr Patton suffered from a severe gassing while at the front with his regiment and for a time was thought dead. The Germans had drenched his position with gas and, although he was safe himself, as he was wearing a mask, he found that, thus impeded, he could not efficiently aid his comrades and therefore threw aside his mask. He recovered after a long stay in a hospital

Chautauqua County

THE FALL MEETING of the Chautauqua County Medical Society was held at Newton Memorial Hospital, Cassadaga, Sept. 22

Dinner was served, followed by a business meeting and scientific session. An address, "Diseases of the Chest and Their Surgical Treatment," was given by Dr Richard Overholt of the Lahey clinic, Boston

Dutchess County

DR. WILLIAM HALLOCK PARK was the speaker at the fall meeting of the Dutchess County Health association on Sept. 24, at the Millbrook Golf and Tennis club, Poughkeepsie. The reports of the Pawling and Wappingers Falls township health committees also were read.

Erie County

FIFTY-FIVE PRACTICING physicians attended the sixteenth annual postgraduate course at the school of medicine of the University of Buffalo. Representing thirty-three universities and fourteen states, this is the largest number in attendance since the course was inaugurated in 1930

The two-weeks course, with a series of clinics, ward walks, and staff conferences, was designed for the general practitioner who wished to review recent medical developments

DR. PETER LIVINGSTON CARTER, seventy-nine, family physician who practiced in Buffalo for the last fifty years and had been connected with numerous hospitals, died in his home on Sept 13, after an illness of about a year

Dr Carter had been attached to the medical staff of the City Eye, Ear and Throat dispensary, the Lexington Heights hospital, Sisters hospital, and the associate staff of Millard Fillmore hospital. In 1921 he was consulting at Buffalo

For several years during the World war he was head physician at the Curtiss Aeroplane & Motor Co, Inc.

Franklin County

DR. G F ZIMMERMAN, of Malone, Secretary of the Medical Society of the County of Franklin, reports that the regular annual meeting will be held in Malone on Oct. 28.

Fulton County

THE FULTON COUNTY MEDICAL SOCIETY opened its Fall season with a meeting Sept 17 in the Hotel Johnstown. Members participated in informal discussions and talked over future activities. At the next meeting October 15, it is expected that Dr E K Cravener of Schenectady, orthopedic specialist, will give a paper.

Herkimer County

THE HERKIMER COUNTY Medical Association met Sept 15 at the Mayflower, Herkimer-Middletown Road, with the president, Dr Harold F Buckbee, Dolgeville, presiding.

The physicians discussed informally the subject of workmen's compensation fees. The nominating committee was instructed to prepare a slate of officers and present it to the group. Election will be at the annual meeting in December.

The association, which once met but four times yearly, will probably continue on the present schedule of six meetings a year.

Kings County

DR EDWIN R HODGE, seventy-six, major, U S Army Medical Corps, retired, died at Veterans Hospital 81, the Bronx, Sept 18.

Dr Hodge served in the Spanish-American War, the Philippine insurrection and the World War. He retired from the Army in 1933. He was a member of the United States Pharmacopeia Committee in Washington for a number of years, and lectured on anatomy at the Army War College.

Born in Plymouth, England, he came to the United States when a boy, attended Yale University and was graduated from Johns Hopkins Medical College. He lived at 485 Bay Ridge pkwy, Brooklyn.

Two sons, two brothers and two sisters survive. He was buried with military rites at Arlington National Cemetery.

THE REGULAR MONTHLY meeting of the Medical Society of the County of Kings will be held on Oct. 20 in the MacNaughton Auditorium, 1313 Bedford ave, Brooklyn.

THE COMMITTEE ON Medical Motion Pictures announces the following program to be given on Wednesday afternoons at 4 30 o'clock in the MacNaughton Auditorium.

Oct 21—"Plastic Surgery," Dr Walter A Coakley.

Oct 28—"Fractures," Dr Joseph Tenopyr.

THE FIRST MEETING of the Brooklyn Thoracic Society will be held on Oct. 16, at the County Medical Society building.

The guest speaker will be Dr Allan Krause who will address the Society on "The Modern Management of Clinical Tuberculosis."

Monroe County

MORE THAN 1,000 physicians and surgeons practising within a 150-mile radius of Rochester, have been invited to a three-day post-graduate medical conference to be held under the auspices of the University of Rochester School of Medicine and Dentistry November 5-7.

Inspection of various departments, clinical and laboratory demonstrations are scheduled for the morning sessions. The Eastman lecture, by an outstanding medical authority, will be given Friday evening, November 6. Brief presentations of practical clinical problems will be given at two afternoon meetings.

The medical men have been invited to attend the concert of the Rochester Philharmonic Orchestra, November 5, and the Rochester-Union football game, November 7.

LECTURES BY Dr George W Corner and Dr Elbert B Ruth were the high lights of the meeting of the Medical History Club in Strong Memorial Hospital amphitheater in Rochester, September 28.

Doctor Corner talked on "A Medical Mystery of the Thirteenth Century," and Doctor Ruth's subject was "Resurrection Days."

Nassau County

DR H G WAHLIG, Secretary of the Medical Society of the County of Nassau, reports that the next meeting will be held on Oct. 27 at the Nassau County Bar Association Club House at Mineola.

A NASSAU COUNTY doctor was outstanding among the Brooklyn and Long Island exhibitors at the 22d annual flower show of the American Dahlia Society held for the first time at the Horticultural Hall of Rockefeller Center in conjunction with the Dahlia Society of New Jersey. The show includes 351 classes for amateurs, professionals and members of garden clubs.

A sweepstakes winner in a class open to all exhibitors and winner of the Charles H Ruscher Memorial Cup, Dr Bruce B Preas of 387 Merrick Road, Rockville Centre, captured thirteen first prizes and two second prizes.

Dr Preas, Health Commissioner of Rockville Centre as well as Police and Fire Department surgeon, has been raising dahlias as a hobby for nine years. A bacterial blight and the recent gale curtailed his exhibit.

Known throughout Long Island as an outstanding amateur dahlia grower, Dr Preas' seedling, Betty Lindgren, won the title,

Miss Tricentenary, as the most popular flower at the Seaford flower show last week.

He is a vice president of the American Dahlia Society and a member of the Dahlia Society of New Jersey, the Ohio State, Midwest and Rockville Centre Dahlia Societies. His dahlias won awards at the recent National Dahlia Show in Detroit and at the Freeport show as well as at the Seaford exhibition. He will enter dahlias in the Camden, N. J. and Washington, D. C., shows.

DR. GEORGE N. LEONARD of Lawrence, pediatrician, attached to the staff of St. Joseph's hospital and widely known throughout The Branch, was honored by his colleagues with a farewell dinner given at Cedarwood Country Club, Woodmere. He will leave to take up practice at Miami Beach, Fla. at an early date.

Dr. Ferdinand Herman, president of the Rockaway Medical society, expressed regrets of the membership of that organization at Dr. Leonard's leaving. Others who spoke briefly were Dr. Martin L. Sowers and Dr. Leonard S. Rau of Woodmere, and Dr. Irving Gray of Brooklyn. A leather medical case was presented Dr. Leonard as a farewell gift.

Dr. Leonard came to The Branch from Albany twelve years ago and established a home and office at 1 Central avenue, Lawrence. He began specializing in pediatrics and in a few years earned a wide reputation in The Branch and Rockaways.

New York County

WHAT THE CITY HAS DONE for the sick unemployed since the start of the medical and nursing service of the Emergency Relief Bureau in December 1932 is told in a report by Charles F. McCarthy, director of the service.

More than 426,750 relief cases received medical and nursing treatment during the period in question, the number under care during the first half of 1936 being 760 per cent greater than the number cared for during the first six months of the service. This, Dr. McCarthy said, indicates how necessary it was to expand the service to meet the health needs of the unemployed. He emphasized, however, that the cost of caring for an individual case during the first half of 1936 showed a reduction of forty-seven per cent as compared with the 1933 cost.

The report stressed that half of the cases would have required hospitalization if the services of the medical unit had not been available.

"Hospitalization would have cost three times more than the bureau's cost per case," Dr. McCarthy said. "Consequently, while

the bureau has spent \$3,002,194.07 in caring for 426,750 cases during the past three and a half years, this expenditure actually represents a saving of \$1,500,000 in regular budgetary expenditures."

The work of the medical and nursing service is done with the assistance of a panel of 4,000 physicians and a panel of 1,800 pharmacists under contract with the ERB. Physicians receive a standard fee of \$2 for a relief visit and serve in rotation. When a doctor is authorized to visit a relief patient he is given the name of a pharmacy to which he may send the prescription. Nurses are recruited from existing visiting nurse organizations.

DR. WALDO H. SANFORD, sixty-four, of 617 W. 168th St., well known throughout the Washington Heights area and a lieutenant colonel in the Medical Corps during the World War, died in Harkness Pavilion, Columbia Medical Center on Sept. 15.

He was driving his automobile through Audubon Ave. when he became ill. He stopped his car and a patrolman drove him to the hospital.

He was vice president of the James H. Torrens Democratic Club of the Twenty-fourth A. D., a member of the New York County Medical Society and of the Richard J. McNally Post of the American Legion.

He was also affiliated with the Fred A. Meyer Post of the Veterans of Foreign Wars and with the Audubon Medical Society. He served eighteen months in France during the World War.

STATE INDUSTRIAL COMMISSIONER Elmer F. Andrews has announced the appointments of Dr. Edgar Mayer of Saranac Lake and New York City, and Dr. J. Burns Amberson, Jr., of New York City, nationally recognized authorities on tuberculosis and silicosis, as "expert consultants on dust diseases" to the State Department of Labor.

Dr. Mayer also was recently appointed medical director of the project for the study of silicosis at the Cornell Medical College and the New York Hospital, sponsored by the New York City Department of Health and the New York Tuberculosis Association. Dr. Mayer is consultant attending physician at the New York and Bellevue hospitals, consultant physician to Otisville and Loomis Sanatoria, to the Broad Street hospital, New York City and to the Preventorium of Tuberculosis, Farmingdale, N. J., and consultant on radiation of the Council of Physical Therapy of the Medical Association. He is also assistant professor of clinical medicine at Cornell Medical College.

Dr. Amberson is professor of clinical medicine, College of Physicians and Surgeons, Columbia University, assistant professor of

clinical medicine New York University College of Medicine, visiting physician, tuberculosis service, Bellevue Hospital, consulting physician, Loomis Sanatorium, attending physician, New York State Tuberculosis Hospitals, member of Medical Research Committee, National Tuberculosis Association and New York Tuberculosis Association, president of the Association of Tuberculosis Clinics

Onondaga County

THE OPENING EVENT of the season for the Syracuse Academy of Medicine was its annual joint meeting with the Utica Academy of Medicine at the Syracuse Yacht and Country Club on Sept. 17.

The program included golf in the afternoon, a clambake at 6 o'clock, and a scientific session during the evening. Speakers at the latter meeting, arranged by the Utica representatives were Dr. J. R. Grant, who discussed "Venoclysis—Uses and Abuses," and Dr. T. Woods Clarke, whose subject was "Little Recognized Types of Allergy."

Oswego County

LAWs RELATING to medical care of welfare cases were outlined and explained by Commissioner of Welfare Lee C. Loomis of Mexico in a talk at a dinner meeting of the Oswego County Medical Society in Oswego, at the Elks' club, Sept. 17. Physicians from all parts of the county were present. The Society will hold its next meeting in November, time and place to be announced.

Otsego County

THE MEMBERS OF THE STAFF of the Homer Folks Tuberculosis hospital presented a scientific program Sept. 16 at a meeting of the Otsego County Medical Association held at the hospital. There were twenty-five present. The society was entertained at dinner in the hospital.

Dr. E. H. Kerper discussed sanitarium treatment of tuberculosis and demonstrated with x-ray films and presented patients. Dr. A. M. Stokes spoke on pneumothorax and pneumonolysis, also using x-ray pictures and patients in the demonstrations. Surgical treatment of the disease was discussed by Dr. E. F. Butler, who explained phrenicectomy, thoracoplasty and various other operations used in the treatment. He used x-ray and patients for his demonstrations. Dr. Ralph Horton, superintendent of the hospital, spoke on differential diagnosis of tuberculosis, demonstrating with x-ray films.

Queens County

THE PROGRAM of the Medical Society of the County of Queens at its meeting on

Tuesday evening, Oct. 27, will be a symposium on obstetrics, as follows:

"Obstetric Education as an Approach to Lower Maternal and Infant Mortality Rates," Edward S. Godfrey, Jr., M.D., Commissioner of Health of the State of New York.

"Prenatal Care," Harriet White, M.D.

"Analgesia and Anesthesia in Obstetrics," Moses Cohen, M.D.

"Conduct of Normal Labor," Henry Eichacker, M.D.

"Vomiting in Pregnancy," Walter Kerby, M.D.

"Bleedings in Early and Late Pregnancy," George J. Lawrence, M.D.

"Toxemias of Pregnancy," James P. McManus, M.D.

The papers to be presented by the members of the Maternal Welfare Committee will be limited to ten minutes each.

Graphically Illustrated Moving Picture, "Mechanism of Normal Labor" (Fifteen minutes).

Discussion.

THE BOARD OF CENSORS of the county society has issued warning against "the practice of certain members to give to the public press accounts of rare operations performed by them, the installation of new equipment in their offices or the contemplated construction of new hospitals in which they are interested."

The censors also say "Ads in church journals, private telephone directories and also the placing of signs in office windows denoting specialties are also in violation of the Code of Ethics of our Society. It may seem old fashioned and antiquated because of the changing economic conditions but, until there is further change in our Code of Ethics, we must all abide by it."

THE AUXILIARY of the Medical Society of Queens County held a bridge-luncheon at the Amber Lantern Inn, Flushing, the afternoon of Oct. 14. Plans are under way for an Armistice Eve dinner-dance.

DR. DAVID B. KIRCHENBAUM, Long Island City, who has practiced general medicine in Woodside and vicinity for almost ten years, was graduated with the degree of Bachelor of Laws from the Brooklyn Law School of St. Lawrence University on Sept. 10.

Dr. Kirchenbaum intends to continue the practice of medicine and says that he studied law as a hobby.

His law studies, started two years and three months ago, grew so interesting that he continued them in his spare time, taking Summer courses, until he won his Bachelor of Laws degree.

Few men achieve degrees in both law and medicine. Among the prominent names of those who are both doctors and lawyers are Supreme Court Justice Phillip J. Brennan and Dr. George I. Swetlow, professor of

medicolegal jurisprudence at the Brooklyn Law School

AT THE COMMENCEMENT of the John B Stetson University on June 8, the honorary degree of LL D, was conferred on Dr John Joseph Kindred, Chief Consulting Physician to the River Crest Mental Hospital at Astoria

Dr Kindred has been for several years professor of Medical Jurisprudence in the Law Department of this University and also has an LL B, as well as an MD degree. He was for ten years a member of the U S House of Representatives from Queensboro New York City, retiring voluntarily six years ago

Dr Kindred is the retiring president of the National Association of Private Psychiatric Hospitals

Tompkins County

THE BIGGS MEMORIAL HOSPITAL will give Tompkins and eight neighboring rural counties "facilities for the prevention and treatment of tuberculosis fully equal to those of any urban area"

This statement was made by Dr John K Deegan, physician in charge of the new state sanatorium overlooking Cayuga Lake, in an address to the Kiwanis Club at the Ithaca Hotel, Sept. 21

Doctor Deegan disclosed that the charge for treatment will be \$250 per day per patient, which will be far short of the actual cost. This charge will include all services, with no extra fees

A patient or his relatives will be required to pay if investigation shows they are able, otherwise a monthly bill will be sent to the Board of Supervisors of the county where the patient resides

The main hospital, Doctor Deegan stated has a rated capacity of 200 patients, who will be drawn from the counties of Tompkins, Cayuga, Chemung, Cortland, Schuyler, Seneca, Tioga, Wayne, and Yates. In addition, the institution includes a children's building to care for fifty children

Two important branches of the hospital's service, said Doctor Deegan, will be a traveling clinic and public health nursing. The object is to discover every case of tuber-

culosis at the earliest possible stage and place it under treatment.

Among services of the institution will be a clinical and pathological laboratory, a surgical suite, rooms for eye, ear, nose and throat, a dental office and laboratory, an outpatient clinical department, X-ray facilities, and rooms for occupational therapy and adult education

A skeleton staff has already assumed its duties

The hospital will be in stages of organization for the next 15 months or so, Doctor Deegan said and no formal dedication will be held before 1937. The children's unit will be the last to be opened

Visitors are welcome to inspect the new hospital at any time during the period of organization, and will be personally escorted by some member of the staff

Washington County

THE ANNUAL MEETING of the Medical Society of the County of Washington was held Oct. 6 at the Court House at Hudson Falls. The program included "Presenting a Case of Displacement of Heart," Dr R C Paris, "Paper on Empyema," K. Creevy, President's Address "Treatment of Peritonitis associated with appendicitis" G M Casey

Dr Maslon was present to represent the Economic committee of the Medical Society of the State of New York. Dr W C Thompson, Medical Consultant Division of Social Hygiene, spoke on Treatment of Syphilis

Westchester County

BRONCHOSCOPIC aid in the diagnosis and treatment of post-operative pulmonary complications was the subject of the address delivered Sept. 15 before the Westchester County Medical Society at its first fall meeting held in Grasslands Hospital. The speaker was Dr Gabriel Tucker of Philadelphia, professor of clinical bronchoscopy at the University of Pennsylvania School of Medicine

The Society meets again Oct. 20 at Grasslands, when the subject will be maternal welfare, with particular reference to operative obstetrics in hospitals and better prenatal care for expectant mothers

HOW A NOISE ANNOYS

Experiments at Bellevue Hospital are reported by Dr Foster Kennedy of Cornell who demonstrated that the noise resulting from the explosion of a paper bag raised the brain pressure to four times normal for seven seconds, and that thirty seconds elapsed before the pressure returned completely to normal. Trephined patients were

used for these experiments, the pressure being measured directly from the brain surface. "The undoubted effect of constant noise," according to Dr Kennedy, "is disturbance of the blood vessel apparatus, and the increase in the degenerative processes in the heart and arteries"

Medicolegal

LORENZ J. BROSNAN, Esq.

Counsel Medical Society of the State of New York

Insurance—Overdose of Drug as Accidental Cause of Death

A recent ruling made by the Appellate Division of the Supreme Court of this State dealing with a suit to recover an accidental death benefit under a policy of life insurance should be of interest to the members of the medical profession.*

The plaintiff in the case was the beneficiary named by her husband in his life insurance policy. For approximately two years prior to his death, the assured had been suffering from diabetes. In December 1933, he had consulted his physician concerning complaints of being restless and unable to sleep. The doctor had given him a prescription of veronal in one and one-half grain tablets to be taken twice daily. On December 31, the husband had arisen at about eleven in the morning complaining to his wife that he was suffering from a severe earache, and the wife suggested that he take some aspirin. A search was made by them to find aspirin about their apartment, and an attempt was made to borrow some from a neighbor but unsuccessfully. The wife thereupon suggested that her husband might take some of the veronal tablets.

About an hour and a half later the man stated that he had taken the veronal and it had made him feel sick. His wife responding to his complaints found that he was in an apparent state of coma, and called the family physician. Emergency treatment was rendered, and the man was taken to a hospital, but he failed to regain consciousness, and died three days later.

The cause of the man's death according to the testimony upon the subsequent trial was unquestionably veronal poisoning, but there was not even a suggestion that death was caused by an attempt at suicide.

The widow instituted an action against the insurance company to recover accidental death benefits upon her husband's policy, the pertinent provision of which entitled the beneficiary to certain monies upon proof of death occasioned as a result "of bodily injuries effected solely through external violent and accidental means." There seems to have been no question that the veronal was taken intentionally, and not accidentally, and upon the theory that the facts did not justify bringing the case within the terms

of its policy the insurance company defended the case.

The trial of the case resulted in a judgment in favor of the plaintiff, and an appeal to the Appellate Term of the Supreme Court, resulted in a reversal with a dismissal of the complaint in favor of the defendant company. However the action was further appealed to the Appellate Division which reinstated the judgment of the trial Court. In arriving at that determination various precedents were reviewed by the Court which are of interest.

Various cases which had been considered as authorities for the defendant's contention showed that in certain instances of unanticipated death brought about by intended means the Courts had ruled that death had not resulted from "accidental means."

In one such case, death had been caused by appendicitis. The proof had shown that the deceased had been riding a bicycle and had in doing so caused certain muscles to be used which had irritated an abnormal appendix, and the tissues surrounding it. The appendix had ruptured by reason of its weakened condition. In that case the Courts had ruled in favor of the insurance company.

Another case in which the ruling was likewise against the plaintiff was one in which the deceased had gone to a dentist for the extraction of a tooth. At his request the dentist administered a small quantity of nitrous oxide gas and the patient died. An autopsy showed the death was caused by status lymphaticus. The decision was that the death was not covered by an accidental death policy.

In still another instance where the same conclusion had been reached, the deceased had on the day of his death been taking a course of physical culture in a gymnasium. Massage of the abdomen in the gymnasium had brought about an intra-abdominal hemorrhage. The immediate cause of death was given as "Intra-abdominal hemorrhage" resulting from "Probably cancer of the intestines," but the contributory cause was stated as "Hemorrhage was caused by either some electrical or manual massage on abdomen received in a gymnasium."

However in another case, where the opposite conclusion was reached, the assured had died from sunstroke. He had intentionally exposed himself to the sun in the

* *Mansbadier v Prudential N. Y. Law Journal*, Sept 25, 1936

conduct of his business for an unusual number of hours thereby bringing on a fatal sunstroke, and the Court had held the death caused "through accidental means"

Another case under consideration was one where the claim of causation had started with a pimple on the lip. It became large and inflamed, and a physician attending the assured opened the lip and attempted to administer remedies. Within a week the man became paralyzed and blind, and died the next day. His cause of death was given as inflammation of the brain produced by staphylococcus aureus. The proof indicated that undoubtedly the germ came from the infected pimple and that a puncture by instrumentation had caused an infection of the deeper tissues leading to death. The Court of Appeals ruled that upon such proof the death was produced by accidental means.

The Appellate Division determined that the venereal poisoning case fell within the category of the last two mentioned cases, and on that authority ruled that although an unusual and unexpected result had followed an intended act, death was caused by accidental means so as to entitle the widow to recover against the insurance company.

Treatment of Pruritus Ani

A man fifty-four years of age consulted a general practitioner with complaints of rectal pain and itching. He told the doctor of having had rectal disturbances for a long time and of having undergone various forms of treatment. The doctor on examination found a fissure and a few hemorrhoids and diagnosed the condition as pruritus ani. He advised alcohol injections for the treatment of the condition, and the next day administered to the patient a local anesthetic of novocaine and injected a thirty per cent solution of alcohol into the perianal region. The injections were made into the subcutaneous tissue about one-quarter of an inch deep, four injections being made in all and a total of approximately thirty c.c. of the solution being administered. The doctor treated the hemorrhoids and fissure by electrocoagulation, dry dressings were applied. The patient was allowed to go home the same day after the operation and after-care was undertaken by a physician who resided in the neighborhood of the patient.

About a week after the treatment a pararectal abscess developed which was treated under the direction of the first doctor by the local physician. A few days later, although the patient's condition was satisfactory, he discharged the two doctors that were caring for him and went to another physician.

The next the doctor who had performed the operation heard of the patient was the service of a summons upon him for the purpose of bringing a malpractice action against him. The plaintiff made the claim that the technic of the operation was improper and that the after-care was also improper. Upon the trial of the action, the plaintiff called as a witness the last physician who had treated him. He undertook to testify that the defendant had departed from proper and approved practice in his method of carrying out the Buie technic of alcohol injections. Practically all of his testimony, however, was eliminated upon cross-examination and at the close of the plaintiff's case the Court on motion of the attorney for the doctor dismissed the complaint. The plaintiff took an appeal from the judgment in favor of the doctor but never actually brought the appeal on for argument.

Treatment of Infected Index Finger

A middle-aged woman consulted a physician with respect to an infected index finger and told him that sometime before she had pricked her finger with a safety pin and that it had become very sore. The doctor incised the end of the finger making an incision about one-quarter of an inch long and one-sixteenth of an inch deep liberating a few drops of pus. He applied a dressing and gave the patient a prescription for a solution of Aluminum Acetate and instructed her to soak the finger in that solution. The next night a telephone call was received at the doctor's office from the patient at a time when the doctor was out of the office caring for another case. When he returned, he undertook to call upon the patient but learned that she had gone under the care of another doctor. He never saw her after that time.

It appeared that the infection had become a great deal worse and the patient had entered a hospital where she remained under care for two weeks. During that time various incisions were made in her hand and wrist to establish drainage. The end result caused by the infection and the treatment necessitated by it was that the patient's thumb and finger became badly crippled and ankylosed.

A malpractice action was instituted against the doctor in which the charge was made that the defendant improperly treated the condition and that due to his negligence the patient had suffered the bad result. When the case was reached for trial, the plaintiff was not ready to proceed and sometime later the action was dismissed by reason of the plaintiff's failure to prosecute the same.

Treatment of Dislocated Shoulder

In response to a telephone call a doctor engaged in general practice called at the home of a middle-aged woman who had just been injured by being struck by an automobile. She complained of pain in her right shoulder and the doctor upon examination diagnosed her condition as a dislocation upward of the right humerus and of the outer end of the right clavicle. Without an anesthetic he reduced first the dislocation of the humerus and then the dislocation of the clavicle. He applied adhesive strips and sent the patient to a hospital for further examination. X-rays confirmed the diagnosis and that the dislocations had been reduced and the doctor continued with the care of the case. The patient's condition progressively improved but when he undertook to manipulate the arm she complained of pain and tenderness and would not cooperate to a satisfactory extent.

At the end of six weeks the patient was in such condition that the shoulder straps were removed and at the end of eight weeks she was discharged as practically cured, although she still complained of tenderness when moving her arm.

A malpractice action was instituted on behalf of the patient in which the claim was made that the doctor was negligent in treating the case, that he had prolonged the period of disability and had caused her to have a permanently painful and disabled shoulder and arm.

The case was put on the calendar but the plaintiff's attorney was never ready to try the case and finally after some time had elapsed a motion was made on behalf of the defendant to dismiss the case for lack of prosecution. At that time the plaintiff's attorney stipulated to discontinue the action.

Treatment of Acne

A young woman consulted a physician in general practice complaining of pimples on her face. The doctor found a condition of acne vulgaris and suggested ultraviolet ray treatment and injections. This form of treatment was administered to her over a period of about three months. When the doctor last treated the patient the eruptions were largely cleared up and the result in general was satisfactory.

The doctor brought an action to recover his fee for professional services and the patient responded by bringing an action in a Court of a higher jurisdiction charging the doctor with malpractice in the treatment of the case. The claim was that his treatment had caused scars on the face of the patient.

Before the malpractice action could be reached for trial the doctor's action for his fee for professional services was reached and a settlement was entered into whereby the doctor received a substantial portion of his fee. No reservation was made in connection with the settlement reserving the patient's right to maintain a malpractice action against the doctor. Subsequently the answer interposed on behalf of the doctor was amended setting forth the facts of the disposition of the doctor's action for his fee as a defense. Upon the answer being so amended the plaintiff's attorney consented to discontinue the action.

Alleged Burn Following X-ray Treatment

A woman thirty-six years of age consulted a physician specializing in dermatology with respect to a complaint of prickly heat rash. Examination showed that she had a dry, scaly reddened rash all over her back and sides. He prescribed a salve for the condition and on that occasion administered to her a quarter of a skin unit of x-ray upon several areas over her back and sides. She returned to the doctor about three weeks later and her condition was improved satisfactorily and again similar x-ray treatments were administered.

Thereafter the patient made the claim that she had sustained an x-ray burn and brought a malpractice action against the defendant on the basis. A physical examination was made on behalf of the defendant prior to the trial and it was ascertained that there was present a trivial change in the color of the pigmentation of the skin where the x-ray had been administered. The case came on for trial as a non-jury case and plaintiff called a witness who testified that the patient had sustained an x-ray burn which had been produced by the first treatment and aggravated by the second treatment. The defendant denied that the patient had ever been burned and testified that her only reaction to the first x-ray treatment was a slight tanning, which would naturally be expected as a result. He testified that the patient had never received any x-ray burn and that the amount of x-ray dosage administered to her was too weak to cause any actual burn. The doctor who made the physical examination on behalf of the defendant corroborated him in his opinion that the treatment was proper and that there had been no x-ray burn.

At the conclusion of all the testimony the Court directed judgment in favor of the defendant, thereby exonerating him of the charges of the malpractice action which had been brought against him.

Across the Desk

Old and New Styles in Automobile Injuries

"AUTOMOBILE INJURIES CHANGE with the changes in car models," remarked a leading surgeon of New London, a few days ago, who has handled a large number of motor-crash victims "Take the 'turret top' of metal on the new cars," he went on "Since that came in, we have had many more injuries of the neck and the lower part of the spine The roof of the new cars is not only made of metal, but it is lower, and the floor is higher, so that the passenger is thrown violently against an impenetrable surface, and his neck or back is injured The older models had roofs made of fabric, with more room, and we didn't have so many injuries of that sort. A little while ago a man was brought into the hospital who was riding in a car like yours"—revealing the sad fact that this scribe drives an old model—"and when he was thrown against the roof, his head went right through, not very comfortable, but it saved him serious injury "

So it looks rather as if we can date the motorist's car by the character of his injuries as he comes in on the stretcher We can imagine the spiffy nurses turning up their pretty noses "He has scratches on his ears where his head went through the roof His car must be out of date " In the next room is a motorist whose spine has been twisted into the shape of the letter S Clearly the owner of an up-to-the-minute model, a patient of distinction. "Was your husband's back injured?" inquires Mrs Witherspoon with a catty smile. "Not at all," replies Mrs Fogg, and her social status slips a couple of notches immediately

Slashed by Jewelry

"Some of the motor-manufacturers are ornamenting the gadgets on the instrument-board with diamonds and emeralds and other cut stones," continued the surgeon "When the car hits a tree or a telephone pole, the passenger sitting next to the driver is hurled down into this display of jewelry, and his—or more often her—face is badly cut up It would save a great deal of painful and disfiguring injury if the manufacturers would avoid having so many projecting knobs and handles on the instrument boards A smoother board, with the present shatter-

proof glass in the wind-shield, would save many of the most distressing injuries we now have to deal with "

A couple of years ago two makes of cars came out with front bumpers presenting sharp edges pointing forward, something like the deadly scythes that projected from the war-chariots of the Assyrians The knees of pedestrians unfortunate enough to get in the way were badly smashed up, and the knife-like bumpers were changed, but many cars carrying them are still on the roads

The craze for a "change" and for something "new" does not always bring something better, and where the innovation turns out to be actually injurious, a change back again is a sign of sound judgment. "I understand," said the New London surgeon, "that the 1937 models will have more room between the floor and the roof, and I hope that will lessen the number of neck and back injuries " Certainly if the passenger is still to be catapulted about, he should at least be given room for his gyrations

Places of Safety and Peril

'What is the safest place in the automobile?" the surgeon was asked

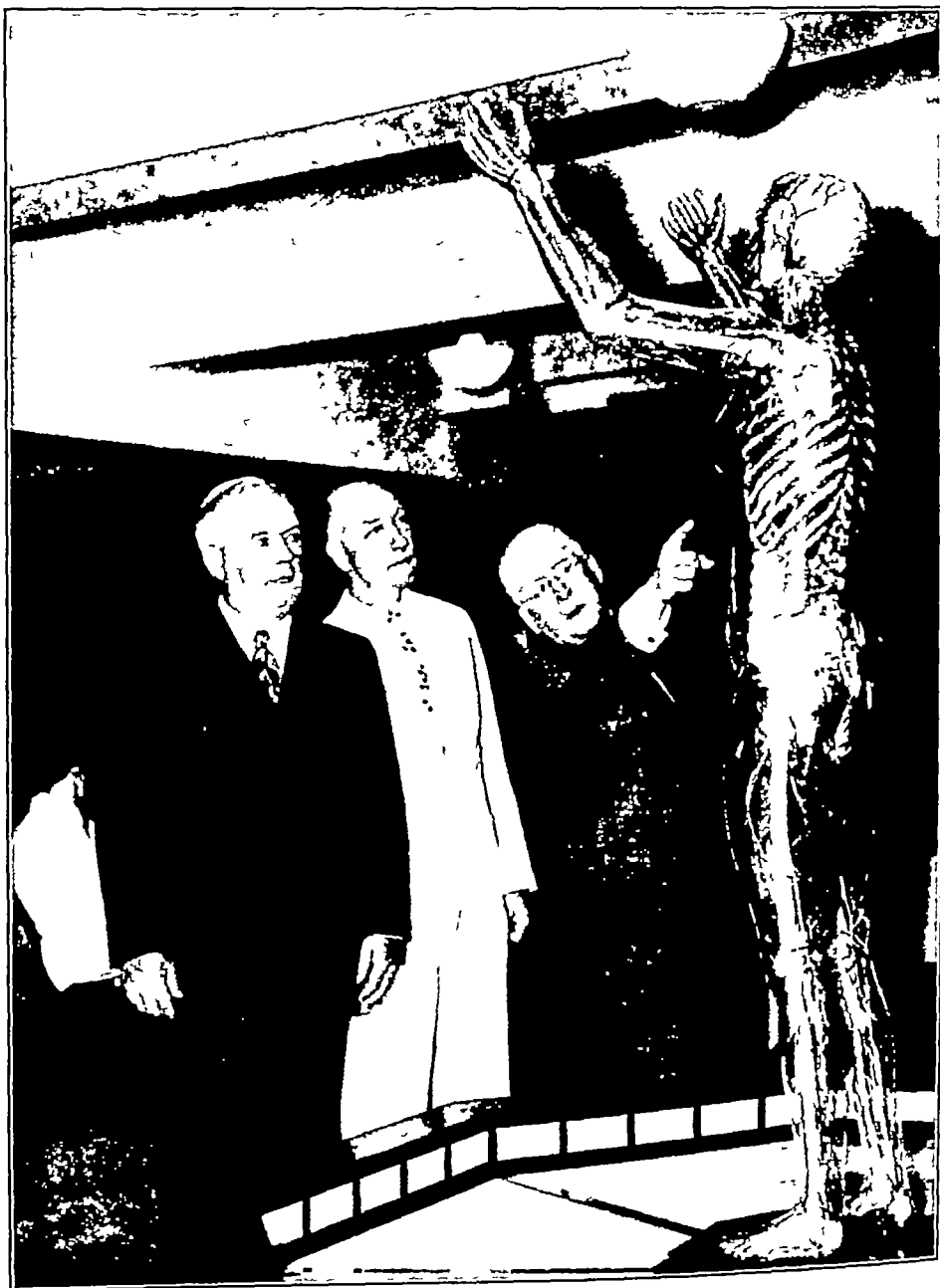
"The safest place is behind the driver's wheel," he replied If he is correct, then, it may frequently happen that the one who is responsible for the crash may, sardonically enough, suffer the least

"And what is the most dangerous position?"

"The middle of the back seat," he answered. "It is the most dangerous because the passenger has nothing to seize hold of to save himself The two people on the ends of the rear seat can grasp handles or strips or the door-frame or something to break their fall, but the person in the middle is shot directly through space onto the edge of the front seat. A common result is a dislocated hip "

Here the surgeon assumed the exact sitting posture of the passenger, with knees and hips bent in a 90° angle

"The knees strike the back of the front seat, while the hips strike the edge. A patient was brought in the other day with both hips dislocated and both legs broken just below



SCIENTISTS EXAMINE FIRST TRANSPARENT WOMAN

Left to right Dr Dean De Witt Lewis, Surgeon in Chief of Johns Hopkins Hospital, Baltimore, Md., who unveiled The Camp Transparent Woman before a distinguished gathering of prominent medical authorities, noted scientists and leading public health officials, Dr Roy Chapman Andrews, Director, American Museum of Natural History, New York, who also spoke at the ceremonies which were nationally broadcast, and S H Camp, President, S H. Camp & Company, Jackson, Mich., who brought the Transparent Woman to the United States as his contribution to public health education.

the knee. He had been in the middle of the back seat."

Who can say, after this, that the much-abused "back-seat driver" hasn't good reason for calling out her words of caution now and then? She is in the place of danger

A Handle that Makes Mischievous

Our surgical friend also mentioned another feature of the motor-car that has its dangers. It is the door-handle, shaped much like a hook, located conveniently to impale anyone unlucky enough to be hurled against it in a smashup. This projecting, and sometimes pointed, piece of metal was condemned by a Detroit surgeon in a paper on automobile injuries reviewed in this department some time ago, so it clearly has come widely into unfavorable attention, but the manufacturers appear to be doing nothing to improve it. The New London doctor recalled the recent case of a pedestrian who raised his arm to protect himself as a car swooped upon him, and the door-handle caught and shattered his elbow.

It would seem merely plain common sense for the manufacturers to build their cars in a way to preserve the life and limb of the motorists, who buy their product and support their entire industry. Criticism of dangerous features by the medical men, called upon to repair the human wreckage, is really constructive, and is a service both to the public and to the industry. The manufacturer should be grateful for it. Automobile safety is bound to come, and intelligent and informed criticism will help bring it about. It cannot be doubted that far-sighted manufacturers welcome constructive criticism, and are doing all they can to make their cars safe to ride in. One such improvement, mentioned by this surgeon, is the present steel body frame, instead of the old wooden frame, apt to splinter and impale the riders in a crash. Emphasis on high speed is being eliminated from the advertising, and if the industry, the authorities, and the saner section of the public work vigorously together, the slight trend noticeable this year toward safer driving may get somewhere.

The Only Transparent Woman

IT WAS HARDLY NECESSARY for the sponsors of the "Camp Transparent Woman" to claim that she "is the first and only one in the world." Mere men who have vainly thought they could see through one or any of the daughters of Eve have learned their mistake sooner or later. In fact, this one had to be built specially for the purpose. The rest are still inscrutable. A transparent woman is so rare that this one, after being exhibited at the New York Museum of Science and Industry, is to go on a tour of one hundred cities which will last over two years. Even then the really important things about the fair sex, their whims, wishes, intentions, and dispositions, in general and in particular, will be just as much of a closed book as before.

This transparent lady, it seems, is not made of glass, as might be supposed, but of "cellhorn," a substance developed by a secret process. She was made by technical and medical experts at the famous Museum of Hygiene at Dresden, Germany, and took two years to construct, after many years of research and experiment. The exhibit was brought to America by Mr. S. H. Camp, widely known maker of physiological sup-

ports, of Jackson, Mich., as his contribution to public health education. He will donate the figure to some prominent medical school or museum for permanent exhibition after the tour.

Every bone, every organ, even the delicate veins and circulatory system are clearly visible to the observer. Electric lights around and within the figure light up all or any part of it at will.

The Transparent Woman will recall the Transparent Man, also brought from the Dresden Museum by Drs. Carl and Robert Mayo of the Mayo Clinic, where it is now on permanent display. Only three other Transparent Men have been constructed. One is in the Hall of Man at the Buffalo Museum of Science, another in the Swedish Red Cross Museum in Stockholm, and the third in the Dresden Museum.

The educational results of the tour of this exhibit to one hundred cities in two years should be incalculable. It should impel the minds of thousands to a more scientific appraisal of their own bodies, and impress upon them the importance of turning for counsel to men with scientific knowledge, training, and skill.

Books

Books for review should be sent directly to the Book-Review Department at 1313 Bedford Avenue, Brooklyn, N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

ORDERING BOOKS

As a service exclusive to our readers, books published in this country may be ordered through the Business and Editorial Offices of the Journal (33 W 42nd St., N Y C) postage prepaid. Order must be accompanied by remittance covering published price.

RECEIVED

Vascular Disorders of the Limbs. Described for Practitioners and Students By Sir Thomas Lewis, M D Octavo of 111 pages New York, The Macmillan Company, 1936 Cloth, \$2 00

Pathology of the Nervous System A Student's Introduction By J Henry Biggart, M D Octavo of 335 pages, illustrated Baltimore, William Wood & Company, 1936 Cloth, \$5 25

Cystoscopy and Urography By Jas B Macalpine, F.R.C.S Second edition Octavo of 478 pages, illustrated. Baltimore, William Wood & Company, 1936 Cloth, \$9 00

Symptoms and Signs in Clinical Medicine. An Introduction to Medical Diagnosis By E Noble Chamberlain, M D Octavo of 424 pages, illustrated Baltimore, William Wood & Company, 1936 Cloth, \$8 00

A Preface to Nervous Disease By Stanley Cobb, M D Octavo of 173 pages, illustrated Baltimore, William Wood & Company, 1936 Cloth, \$2 50

Surgical Diseases and Injuries of the Genito-Urinary Organs By Sir John Thomson-Walker, F.R.C.S Second edition, revised Edited by Kenneth Walker, F.R.C.S Quarto of 974 pages, illustrated Baltimore, William Wood and Company, 1936 Cloth, \$10 00

Johannes De Murfeld of St. Bartholomew's, Smithfield His Life and Works By Sir Percival Horton-Smith Hartley, M D & Harold Richard Aldridge, M A Octavo of 191 pages New York, The Macmillan Company, 1936 Cloth, \$4 50

A Text-Book of Physiology By H E Roaf, M D Second edition Octavo of 679 pages, illustrated Baltimore, William Wood & Company, 1936 Cloth, \$6 75

Bacteriology in Relation to Clinical Medicine Theoretical and Applied. For Students, Laboratory Workers and Practitioners in Medicine and Public Health By M N De M R C P & K. D Chatterjee, M B Quarto of 599 pages, illustrated Calcutta, The "Statesman" Press, 1935 Cloth, 30/

Lobar Pneumonia and Serum Therapy With Special Reference to the Massachusetts Pneumonia Study By Frederick T Lord, M D & Roderick Heffron, M D Octavo of 91 pages, illustrated. New York, The Commonwealth Fund, 1936 Cloth, \$1 00

Illustrious Contributors to Public Health. Being the names carved on the new building to house the Departments of Health, Hospitals and Sanitation, and the Office of the Chief Medical Examiner A Souvenir prepared for the Dedication Exercises on Tuesday, November 26, 1935 By Charles F Bolduan, M D Octavo of 33 pages, illustrated 1936 Cloth

Contraception as a Therapeutic Measure. By Bessie L Moses, M D Duodecimo of 106 pages Baltimore, The Williams & Wilkins Company, 1936 Cloth, \$1 00

Williams Obstetrics A Textbook for the Use of Students and Practitioners By Henricus J Stander, M D Seventh edition Octavo of 1269 pages, illustrated New York, D Appleton-Century Company, 1936 Cloth, \$10 00

REVIEWS

The Art of Ministering to the Sick. By Richard C Cabot, M D & Russell L Dicks, B D Octavo of 384 pages New York, The Macmillan Company 1936 Cloth, \$3 00

Dr Cabot's last, and not least important, contribution to the art of caring for the sick is a book written with the Rev Mr R L Dicks, for the use of clergymen in preparing them for their pastoral responsibilities in this matter. The problem is approached in such a tolerant spirit that the rabbi, the priest, the agnostic, will find himself heartily assenting to most of the statements. It is approached in such a wise and understanding spirit that these same readers will say to themselves "This is not only true. This is important." The psychology of the patient, his tendencies and

needs are set forth in a way that indicates wide experience from the standpoint of a physician, of a minister, and of a patient. Every doctor could profit immediately in the care of his own patients by this review of much that he knows, and some things that he has not noticed or thought about. The minister is addressed directly on why and how he can help out in the care of the sick. His first function is that of an understanding friend, there to do what he can to help. This sooner or later involves a recognition and encouragement of the usual effect of an illness toward a growth in character. Here definitions are clear, technique fully described. Listening rather than arguing, encouraging the patient to do his own thinking, but not neglecting helpful authorities

on occasion, in fact, the best principles of good teaching are presented. The aim in actual accomplishment for the patient is toward a spirit that can face failure without self pity, success without complacency, whose satisfaction so far as self is concerned is growth. This is a doctor's inadequate and necessarily brief review. No doubt a clergyman would stress other aspects of the book. Both would agree that it is wise and kind and needed.

TASKER HOWARD

The Patient and the Weather By William F Petersen, M.D. Volume 1, part 1. Quarto of 127 pages, illustrated. Ann Arbor, Edwards Brothers, Inc. 1935. Cloth, \$3.75.

This is the introduction to three volumes, planned by the author, as a series of monographs that deal with meteorological influences on normal persons and on the patient. As such, it presents a rapid survey of the field. It is a book of figures and maps—"maps dealing with the human beings that populate the land, maps that show why they are what they are and why they are becoming more so—"

This part of the work is limited to a visual demonstration of the facts available to the author. In Volumes II and III Petersen presents and develops more fully his theories of the influence of the weather and the season on such disease processes as multiple sclerosis, tabes, anterior poliomyelitis, the psychoses, etc. The subject is approached from a philosophical point of view. The author quarrels with the academic teaching in our medical schools because students are taught to think in terms of ultimate results. As Petersen puts it, "We think too pathologically." He feels that while morbid anatomy has great didactic value, after all, pathology is an end result of the disease, whereas physicians must seek the beginning of the process. He bemoans the fact that modern medicine has forgotten or neglected the teachings of Hippocrates, especially in regard to the influence of the environment on the individual. Hippocrates insisted that a knowledge of meteorology is essential for the understanding of medicine. The author stresses this thesis, and the monographs are the outgrowth of the postulates that the environment affects the patient. This applies chiefly to the immediate environment, namely, the weather and the season. He has made use of the meteorological changes to support his contention because this environmental factor can be measured with considerable accuracy. In this volume a few salient facts are pointed out but more details follow in the other volumes.

JOSEPH L. ABRAMSON

Immunology By Noble P. Sherwood, M.D. Octavo of 608 pages, illustrated. St. Louis, The C. V. Mosby Company, 1935. Cloth, \$6.00.

This book was prepared primarily for the medical student and for those seeking an introduction to the broad field dealing with infection and resistance. It covers not only the theoretical aspects of the subject, but also presents most of the common immunologic laboratory procedures which prepare the student for the practical problems he will encounter in practice.

The material is divided into relatively short paragraphs, each of which has its own title. The style of presentation is simple and almost elementary.

The first few chapters deal with infection and infectious agents host-parasite relationships, and anatomical and physiological factors in immunity. Then follow discussions on the various theories of immunity. The different types of anti-bodies and their importance in diagnosis are reviewed. Practical and theoretical considerations of toxins, anti-toxins and serums are taken up. Other subjects treated in detail include antigens, specificity, colloids, complement fixation, and hypersensitiveness. Lists of references follow each chapter. Many tables, figures and plates aid in the presentation of material.

In this book the author has achieved his purpose of effectively presenting a difficult subject in a manner which will appeal to the novice in the field.

MATTHEW WALZER

Fundamentals of Biochemistry in Relation to Human Physiology By T. R. Parsons, M.Sc. Fifth edition. Duodecimo of 453 pages, illustrated. Baltimore, William Wood & Company, 1935. Cloth, \$3.00.

Since 1923 this book has gone through five editions, the third required a reprinting. This, recommendation enough for any book, is particularly complimentary to a work that does not profess to cater to the daily bedside needs of the average general practitioner.

This book is written in an easy readable manner and presents the subject clearly, concisely and interestingly. Accuracy and thoroughness are not sacrificed to brevity. The frequent editions keep the work up-to-date.

In this edition the complicated chemistry of muscle metabolism has been given a whole chapter. Special attention has also been devoted to the fascinating subject of sterols and the sex hormones.

Altogether it is a little book that deserves a place of honor in every physician's library.

BENJAMIN DAVIDSON

Synopsis of Clinical Laboratory Methods
By W E Bray, M D Duodecimo of 324
pages, illustrated St. Louis, The C V
Mosby Company 1936 Cloth, \$3 75

The object of bringing together scattered and inaccessible recent information and the most frequently used methods of laboratory diagnosis in one manual has been well met by this practical synopsis. Not too elementary, it is definite and complete for assistance to the clinician as well as the laboratory worker, experienced or inexperienced. The selection of material, color plates, and illustrations is remarkable for such a small manual. Noteworthy are the practical adaptations and the amount of recent authentic material included. The references in the body of the text would be more outstanding as footnotes, however.

IRVING M DERBY

Manson's Tropical Diseases A Manual of the Diseases of Warm Climates Edited by Philip H Manson-Bahr, M D Tenth edition, revised Octavo of 1003 pages, illustrated Baltimore, William Wood & Company 1936 Cloth, \$11 00

Consistent with the original intention of Sir Patrick Manson, the latest edition is called a manual of the diseases of warm climates. Practically it has become a reference text book and has fulfilled a role similar to Osler's "Principles and Practice of Medicine." Because of his original researches and the contributions of the successive editions of his book, Dr Manson probably deserves his unofficial title of "Father of Tropical Medicine." Every worker in areas where tropical diseases abound has made frequent use of the material found in the chapters on diagnosis and treatment.

The present edition contains a great deal about the recent advances in the field of virus diseases. The newer methods of prophylaxis of yellow fever make fascinating reading. Since all are aware of the existence of amoebic and bacillary dysentery, endemic typhus, spotted fever, and undulant fever in eastern United States the excellent sections on these diseases are of more than academic interest. It is frequently forgotten that filariasis, schistosomiasis and other rare parasites are imported from the West Indies and other infested areas. Valuable material on all of these subjects is contained in Manson's book.

Mention should be made of the numerous beautiful plates of the malarial and other parasites, oriental skin diseases, the colon and rectum in dysentery, the sprue tongue and the particularly fine ones of mosquitoes and other insect carriers of disease.

It is fortunate that the present editor Dr Philip Manson-Bahr, has been able to carry

on in the Manson tradition and bring us a tenth edition containing all the recent advances in the field.

J A CURRAN

Pediatric Treatment. A Manual of the Treatment of the Diseases of Infants and Children designed as a reference work especially for the General Practitioner and Physicians entering the field of Pediatrics By Philip S Potter, M D Octavo of 578 pages New York, The Macmillan Company 1935 Cloth, \$5 00

This book covers, in more or less detail, methods of handling and treating disease of the infant and child. Most modern textbooks fail to cover this ground acceptably. Those physicians, far removed from the aid of good nursing care and who are unaccustomed to the detailed care of young infants will find the methods described of aid. Also the procedure for giving drugs to infants as well as many other "finesses" jotted down here and there make this volume a well worth while addition to one's library.

THURMAN B GIVAN

A Guide to Psychiatric Nursing By F A Carmichael, M D & John Chapman, M D Second edition Octavo of 175 pages, illustrated. Philadelphia, Lea & Febiger 1936 Cloth, \$2 25

This is a volume of pocket size that tells briefly the story of mental disease from the very early conceptions to the present status of psychiatry. As the title implies, it is primarily for nurses and for them defines certain psychiatric phrases and terms, and follows through with a descriptive classification of the psychogenic and organic reactions and their etiology. The chapters on treatment and the ethics and duties of psychiatric nursing should be particularly helpful to the serious reader.

A E SOPER

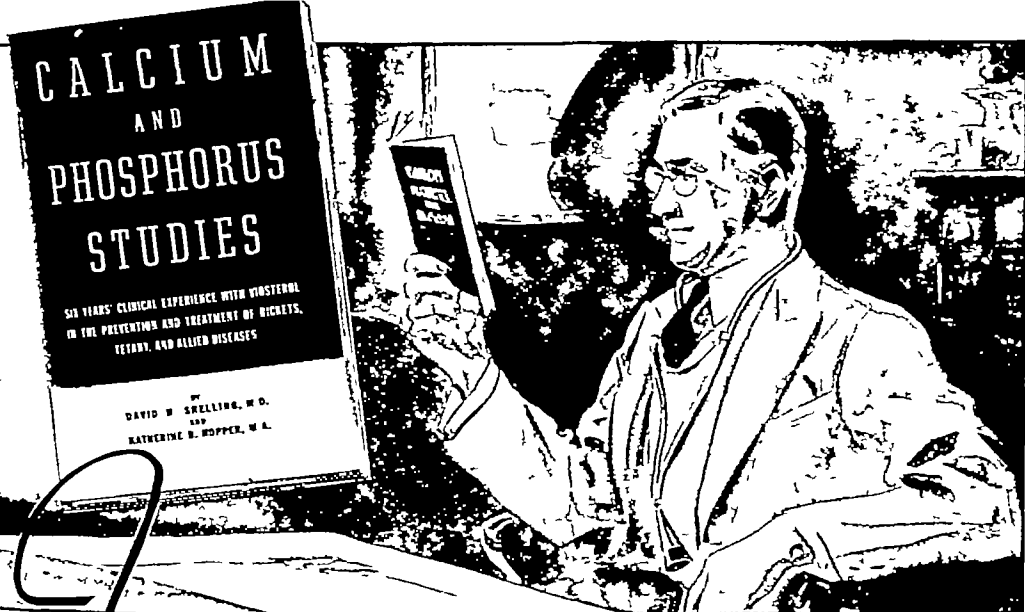
Sex Behavior in Marriage By Charles A. Clinton, M D Duodecimo of 159 pages New York, Pioneer Publications, Inc, 1935 Cloth, \$2 00

This little book is very well written, and the author is to be congratulated in his able treatment of some rather difficult subjects. His wording is simple, very clear, and his meaning can be easily understood by those who know little or nothing about the subject of sex.

The instruction given is excellent, and there is nothing in it which might stimulate sex desires.

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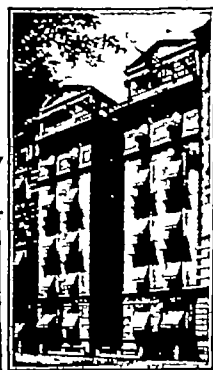
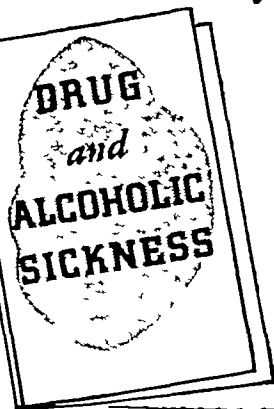
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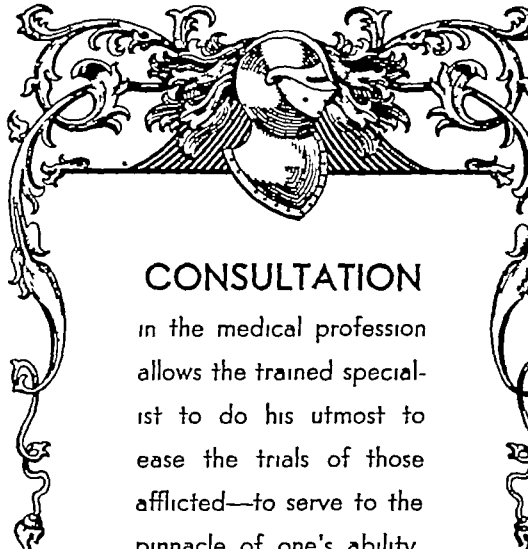
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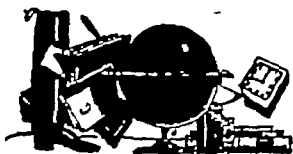
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Another aim is to give the mind power rather than attempt merely to store it with information. The power to know is more important than knowing. Recitations are but daily affairs. The ability to think is for a lifetime, and its influence upon others is for eternity.

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'Betalm 1' (Vitamin B₁, Lilly) Pulvules have been found effective in the treatment of alcoholic polyneuritis and other forms of deficiency of this vitamin. They provide for an economical administration of vitamin B₁ to supplement dietary management and are frequently indicated where it is impossible for the patient to assimilate the necessary quantities of this accessory food substance.—*Adv*

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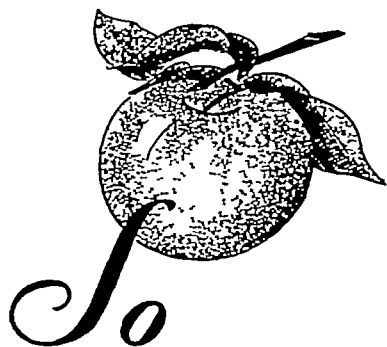
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Travel and Resorts

Tee Time is All the Time

Golf, the sport for all, is no longer a seasonal game. Wherever you find a little grass and temperature the upper side of the freezing point, you'll find this sport somewhere in the neighborhood of a first class hotel.

Few resorts are without at least one "par excellence" golf course. Once attributed to absentees from "Golf Widows" and to those "slightly erratic," golf has become the sport of males and females from sixteen to sixty-plus.

Golf keeps one out in the open. It offers the finest of opportunities for a mild yet effective exercise. It develops poise, trains the sight and rests the eyes, restores ability to act normally instead of rushing and bustling, takes the edge off harassed nerves (jokes to the contrary notwithstanding), and brings one into association with the finest people.

Pride in a good set of golf clubs is as instinctive as a child's excitement over a new doll, a football, or any toy, and today's crop of "sticks" are as far improved as the 1937 automobile over the gas buggy some of us once used to take us out to the links.

Cost of playing golf, which used to be so prohibitive for the average fellow, is now practically in reach of everyone. Public courses have been largely responsible for this encouraging aspect. A morning or an afternoon at the golf links is no more expensive than running a car for the same period of time—and is decidedly more healthful.

Atlantic City with several fine convenient golf links in its vicinity offers the best time of the year right now, and holds open season for golfers longer than any place of comparative distance from this State.

For those who take their golf seriously, finding time throughout the year in which to take some healthy swings, south Atlantic coast states from Virginia to Florida feature many excellent courses for deep-winter play.

Bermuda, conceded a Treasure Island, holds multiple attractions for the golfer who likes to "play them all" and who enjoys that little sea trip which helps to lure folks to these islands. Without the natural wonders of Bermuda she would still be famous for her golfing facilities. Eight of the finest courses in the golfing world are laid down in Ber-



muda's rolling, wooded terrain, and seven of these are open to visitors. Thousands travel to Bermuda for golf alone, and find themselves amply rewarded by the many other delightful features for the "time out" from golf.

In subtropical regions, over night by fast, luxurious trains of the Atlantic Coast Line, or Seaboard Air line railways, winter is left behind for June-like idealic golfing weather. Practically every town in Florida that receives the attention of northern guests in winter has one or more golf courses which are the equal of the best anywhere, some connected with the finest hotels, others more or less private. In Georgia, North and South Carolina, and Virginia—opportunities to tee off all winter long are open to those who must stay within quick return of home.

With low excursion fares now featured by the railroads, golfing jaunts have become unusually economical, and with tournaments soon wending southward, many golfers will follow their "golfing star" to the greener grasses of winter resorts.

* * *

Let's Fly

The song is gone—but the melody lingers on.

The novelty of flying is fast wearing off and it is becoming "mighty convenient" rather than a sport or adventure. The thrill of moving through space is diminishing and being replaced by the excitement of getting there quicker than our ancestors ever dreamed of.

The past few months have witnessed a tremendous increase in air passengers. Accommodations for weekend schedules have been taxed beyond the capacity of air lines to meet the demand for passages. Thousands have been turned away from terminals and booking offices.

Of course time isn't always such a vital element, but when business or engagements are such that hours saved more than offset a little additional charge, the choice of this mode of transportation becomes almost a necessity.

Airplanes have ceased to be merely a carni-

(Continued on page 252122)

THERE IS

no hay fever

IN BERMUDA

Hay fever causals (see report quoted below) simply do not exist in Bermuda. Nor can they go there, thanks to Bermuda's unique air-conditioning apparatus

This apparatus consists of salt water and a system of prevailing breezes. All air bound for Bermuda must cross a 600-mile stretch of briny deep. En route, even the most persistent ragweed pollen—as well as soot and cinders and taxi-cab honks—must weary and fall, despairing, into the waiting waves. Thus the breeze continues on toward Bermuda in a state of constantly increasing cleanliness.

You, meanwhile, are sunning your complexion on these famous pink beaches. Or perhaps you are splashing in multi-coloured surf, playing golf, tennis, watching the yacht races—anything, in fact, but sneezing!

Bermuda's freedom from hay fever has long been known to visitors. It received official confirmation when Professor Frederick H. Hodgson, in August of 1935, spent several weeks there, under the auspices of the New York State Journal of Medicine, to secure an expert, unprejudiced opinion on the occurrence or absence of hay-fever causals in Bermuda.

"*the Colony,*" stated Professor Hodgson's official report, "*passed a hundred per cent as a sanctuary for hay-fever sufferers*"

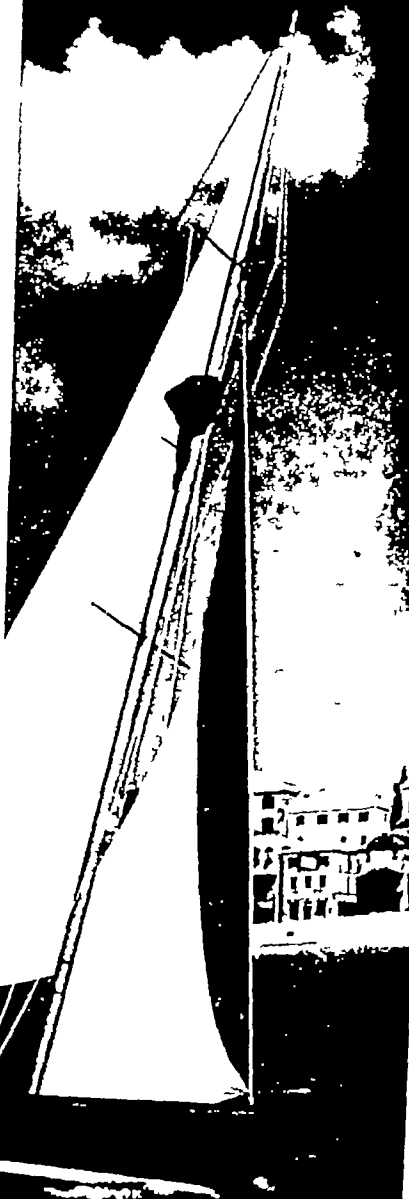
"BUT CAN I AFFORD
BERMUDA?"

• The inexpensiveness of a trip to Bermuda always astonishes those making their first visit. Round-trip passage (with private bath) on a luxurious liner costs as low as \$50 for four joyous days at sea. In Bermuda you can secure a splendid room and excellent meals for \$7 a day.

Bermuda
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For booklet Your travel agent, or The Bermuda Trade Development Board
500 Fifth Avenue, New York. In Canada, Sun Life Building Montreal

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field, Linwood, Somers Point and Seaview. The fall golf tournaments are underway. Each of these clubs reports that the weekends bring a huge influx of golf enthusiasts.

The visiting anglers are returning to the docks with huge catches as the fishing continues good. Boats at the Atlantic City Tuna Club and the Inlet Yachting Center will be making their daily trips to sea or up the back bay as long as the fish continue to bite.

From headquarters of the Atlantic City Camera Contest, Albert H. Skeep, chairman of the committee in charge, emphasizes that the amateur photographers have only until October 17 to submit their summer pictures for consideration.

* * *

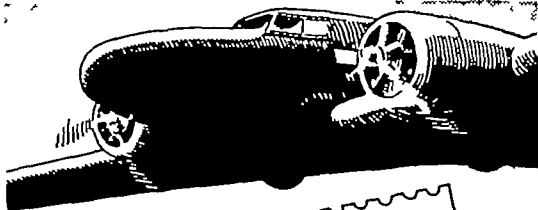
Chile Celebrates Fourth Centenary of Founding of Valparaiso

Word comes from Chile that in Valparaiso and Vina del Mar elaborate celebrations commemorating the Four Hundredth Anniversary of the founding of Valparaiso began the last week in September and continues through February.

Valparaiso, seventeen days from New York by Grace Line "Santa" ships which make weekly trips down the West Coast, is the chief shipping center of Chile and the port for Santiago, the capital—Valparaiso was founded in 1536 by Juan de Saavedra and named after his birthplace in Spain—a name meaning "Vale of Paradise." Within five minutes' ride from the port, is Vina del Mar, the "Biarritz" of the West Coast—a place of imposing villas, nearby seaside resorts, an ultra modern hotel, and a Casino where fortunes are won and lost in true Monte Carlo style. Both the port and the resort are making extensive preparations for the entertainment of visitors during the period.

The celebration opened with the formal dedication of the new Municipal Theater, new Palace of Justice, and of the Cathedral now under construction in Valparaiso, and a week will be set aside to be known as *Semana del Trabajo*, or "Week of the Workers" during which there will be an Exposition of Industrial Arts and a series of festivals during which native dances and concerts will be presented. Contests will be conducted with awards for the best sculpture symbolic of the history of Valparaiso and for the best essays on the history of Chile.

The calendar of special sports events includes a Chilean rodeo, broncho-busting contests, hockey games, polo matches, soccer, (Continued on page xxxvii)



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*** UNITED AIR LINES ***

Fastest, shortest between the East and most Pacific Coast cities

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ATLANTIC CITY

Directly Facing the Sea

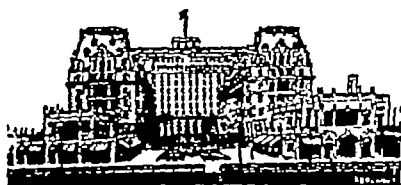
So maintained to provide the necessary elements of a normal, restful existence... great sun decks and solaria . spacious guest rooms with ocean exposure

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Three blocks from Auditorium & Union Station

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3 persons—\$5.00, 4 persons—\$6.00

Write for free A.A.A. road map, also our folder with map of downtown Buffalo

HOTEL LENOX

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BUFFALO

CLARENCE A. MINER, President

val ride for amusement seekers—they have become as much a part of daily routine as other things which are taken for granted. We are less excited when someone mentions flying to arrive at their destination, and people are beginning to make a choice of air line companies and their facilities rather than just a decision to go by plane.

Time doesn't "march on"—it flies

* * *

"Meeting the Conventions"

During the next few months Atlantic City will more than ever live up to its name of "Convention Capital of America" with thirty major gatherings and a similar number of smaller ones scheduled to come here.

Each year these business sessions bring thousands of the nation's commercial and civic leaders here to participate in three and four day discussions of their various problems. This season is no exception and it is conservatively estimated that in excess of 100,000 men and women will come here for this purpose during October, November and December.

The convention program got off to a good start with the arrival of delegates from all over the country to attend the annual meetings of five allied groups in the baking industry. These include the American Bakers Association, Bakery Equipment Manufacturers Association, Millers' National Federation, Allied Trades of the Baking Industry and the National Association of Bakery Supply Houses. Approximately 10,000 delegates all told attended the sessions which were held in the municipal convention hall.

Following closely on the heels of the bakers there comes a long list, led by the 25th annual Safety Congress and Exposition, October 5 to 9, another gathering expected to attract in the vicinity of 10,000 delegates. After that come still other groups continuing right up to the next summer season and keeping Atlantic City constantly on its toes catering to the varied tastes of its guests.

With the many visitors here a variety of diversions is provided for them. In October the beach is thrown open to equestrians and a fine bridle path, a wide flat stretch eight miles long, will be available. Meanwhile mainland bridle paths, particularly attractive at this time of the year, continue popular. The Boardwalk bicycle lane, open from 6 a.m. to 9 a.m., is getting its usual large quota of cyclists each day. The 'walk provides what is probably the safest bicycle lane in the country.

On the nearby courses at Brigantine, North-

rugby, football, gymnastic drills, bicycle races, and swimming contests. The celebrations will end with an International Horse Show and a week of carnival.

Invitations have been extended to many foreign countries asking them to send military teams to represent them at the horseshow and according to the newspaper "El Mercurio," a gratifying number of acceptances have been received. It is expected that teams will be sent from the United States and Canada.

* * *

Train Travelers Soon to be Able to Ship Their Cars Between Canada and U S

Effective Oct. 15, private automobile owners can ship their cars not only between points in Canada, but also from Canada to the United States, under a new "passenger-with-automobile plan" announced here by C B Foster, Passenger Traffic Manager of the Canadian Pacific Railway. Under this plan, owners at very moderate expense can eliminate long distance drives, and may secure prompt delivery of their automobiles at their destination.

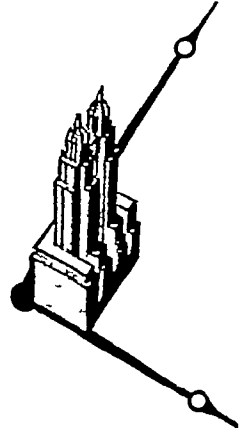
In formulating the plan, the Canadian Pacific Railway realized that a great many car owners want their machines when sight-seeing, but object to driving the intervening distance to reach resort territory. The plan provides for shipment of a car in freight service at a rate equal to one and one-third times the one way first class passenger fare, provided the car owner also holds two first class tickets covering the journey. Thus a man and his wife, desiring to go to Vancouver, could have their car shipped via freight by presenting their passage tickets, and paying a further fare and one-third for their automobile. Further, passengers enjoy all privileges, including alternative routes.

The "passenger-with-automobile plan" provides a minimum delay in receiving cars at destination. In fact, if the cars are shipped in advance, they should reach their destination almost as soon as their owners. Stopover privileges for cars are also included, and a further feature in the case of shipments to the United States is the simplicity with which the Customs regulations have been worked out. Under this plan the owner will not have to be present when the car passes the Customs.

The new service extends to cars shipped by freight to seaports for shipment overseas, and in the case of through shipments includes carriage on the "Princess Helene" across the Bay of Fundy to Nova Scotia and on the British Columbia Coast ships between Vancouver, Victoria and Seattle.

(Continued on page xxxviii)

TODAY'S CENTER



Stop at the heart of important social and business New York. The Waldorf Astoria. Just a few steps from Fifth Avenue shops, art galleries, clubs, Grand Central and the leading theatres fifteen minutes from Wall Street.

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Need Coddling!**

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cooked delicious meals
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atmosphere Fifteen minutes
to Hamilton by train or ferry and
just a short walk to Coral and
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Located near principal points of interest, providing ready facilities
for all sports and recreative activities A modern hotel in every sense
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can be made through better travel agencies, through our New York
Office at 500 Fifth Avenue, or direct — attention of Jack Peacock
Green, Managing Director

The CORAL ISLAND Club



THE BEST VACATION DAYS

are just ahead!

THIS is the perfect season for a perfect vacation at Grossinger's Lots to do Golf on a swell 18 Hole Course, Tennis, Riding Music and Entertainment in the evening Jolly crowd Rates are pleasantly down!

WRITE TODAY FOR ALL DETAILS

OPEN ALL YEAR

The **Grossinger** *Hotel & Country Club*
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REST . . . CHANGE . . . CONVALESCENCE

Ideal oceanfront location—no steps to climb—open to the fresh sea air and maximum sunshine spacious decks (afternoon tea and bouillon served). two heated ocean solaria . . . library and game room . . . sea water in all baths . . . wholesome, tasty cuisine.

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Large cheerful rooms,
transient or residential,
excellent food, room
service without charge,
open roof deck, enclosed
solarium, library, chil-
dren's playroom, private
park privileges

"Brains" of Ocean Liners

You've often heard of the gyro-compass, the "Metal Mike" and all of the other gadgets which go to make up the "brains" of a modern transatlantic liner but have you ever stopped to wonder about them and just what purposes they serve?

Your correspondent has!

So we decided to find out about them in a language we could understand. Once this decision was reached, we immediately hied ourselves to the bridge—that "no passengers permitted" land of any vessel—of the new Cunard White Star super-liner "*Queen Mary*" when she was in port the other day to get all of the details on the most modern navigation instruments.

The first person we ran into was Junior First Navigating Officer Harold P. Grindrod. He said he'd be glad to explain the bridge instruments to us and spent a half day doing so. At times Mr. Grindrod's language got a little too technical, but our blank looks managed to bring him back to terms we could understand. The following is a faithful record of his explanation of the myriad instruments on the bridge.

Gyro-Compass—This is a mechanical compass, the principle of which was adopted from the gyro top we all played with as children. It is a wheel weighing sixty pounds and revolves at the rate of 6,000 revolutions per minute. This compass always points to the "true North" as it gets its directive force from the earth's rotation and the force of gravity. This is perhaps the most important instrument on the bridge.

Gyro Pilot—This is an automatic steering device, known in navigating parlance as "Metal Mike." When this instrument is connected to the gyro-compass, the navigating officer can set it on any course he wishes to follow and the vessel will follow that course without deviation or human operation. By merely moving a lever on the steering apparatus of this instrument it can immediately be changed from automatic to hand steering.

Telemotor Gear—There are two of these aboard the *Queen Mary* and they are used for hand steering. They operate hydraulically. This gives the *Queen Mary* three complete sets of steering gears—the duplicate hydraulic telemotors and the electric telemotor system incorporated in the gyro pilot, which is a parallel system.

Bearing and Steering Repeater Compasses—There are two bearing repeaters, one on

(Continued on page 31)



THE BEST VACATION DAYS

are just ahead!

*T*HIS is the perfect season for a perfect vacation at Grossinger's Lots to do Golf on a swell 18 Hole Course, Tennis, Riding Music and Entertainment in the evening Jolly crowd Rates are pleasantly down!

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Ideal oceanfront location—no steps to climb—open to the fresh sea air and maximum sunshine . . . spacious decks (afternoon tea and bouillon served) . . . two heated ocean solaria . . . library and game room . . . sea water in all baths . . . wholesome, tasty cuisine.

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Sea Water Swimming Pool
Turkish Baths Marine Sun Deck

European Plan

Beautifully Furnished House-keeping Apartments

Bar, Grill and Cocktail Lounge



Write for Descriptive Booklet and Rates

(Continued from page xxxviii)

each wing of the *Queen Mary*, which are used for taking bearings from either the sun or land. The steering repeaters are located inside the pilot house, one atop the gyro pilot, and also are used for taking bearings and celestial observations. These also are auxiliaries of the gyro-compass.

Magnetic Compass—This supplements the gyro-compass for taking bearings. It is similar to the old style compass as first carried on ships. The magnetic compass gets its directive force from the earth's magnetism and therefore points to the "magnetic North" instead of the "true North."

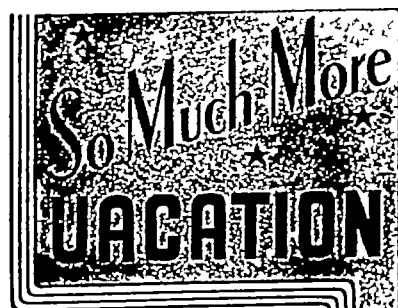
Course Recorder—Every movement of the ship's head is shown on a graph contained in this instrument. It shows an alteration of one degree variation from the set course. This also is connected to the gyro-compass.

Electric Telegraphs—These are the most modern means of signalling the two engine rooms and have replaced the old style chain and gearing telegraphs. They are built in pairs, one telegraph for the engines operating the two starboard (right) propellers and the other for the port (left) propellers. There is a set on the starboard open bridge, another on the port open bridge and four in the navigating room. When the liner is in port, the handles stand at the word "stop" on the face of each instrument. The face is divided into two sections, "astern" and "ahead" and the orders read "finished with engines," "dead slow astern," "slow astern," "half astern," "full astern," "stand by," "dead slow ahead," "slow ahead," "half speed ahead" and "full speed ahead." The navigating officer moves the handle to the desired order and a handle on a similar instrument in the engine rooms moves to the same order, a bell ringing at the same time. The engineer then signals the bridge on the same instrument that he has received and is carrying out the order.

Helm Indicator—This instrument indicates whether the liner is keeping a true course. If the helm (front of ship) moves to port (left) of the course set on the compasses a red light shows, if to starboard (right) a green light.

Silent Room—A small room about three times the size of an ordinary telephone booth, located in one corner of the wheelhouse. This room contains the submarine signaling devices. Each lightship has its own call. So many strokes, according to the lightship, are sounded by means of a submarine oscillator. By clamping ordinary telephone receivers to each ear, the navigating officer is able to hear the strokes. By locating on his chart the

(Continued on page xlii)



On the board walk you get the real sea breeze, you slip on your swim suit in the hotel—in a step or two you are on the beach. You can sit on the sun deck and watch the world go by a gay colorful world at play and it costs no more at the



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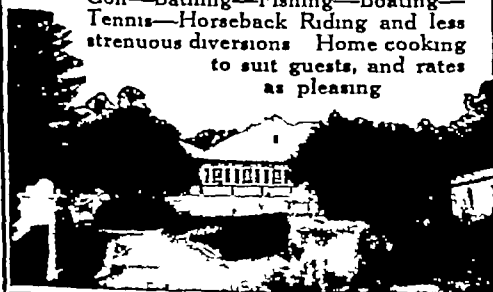


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Golf—Bathing—Fishing—Boating—Tennis—Horseback Riding and less strenuous diversions. Home cooking to suit guests, and rates as pleasing.

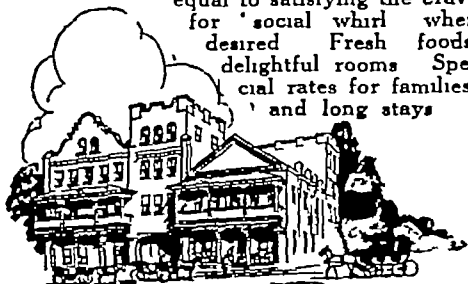


The GLADYN

Everything essential to comfort, rest, and well-being is provided for a limited number of discriminating guests. A cuisine that assures well-balanced and tasty meals.

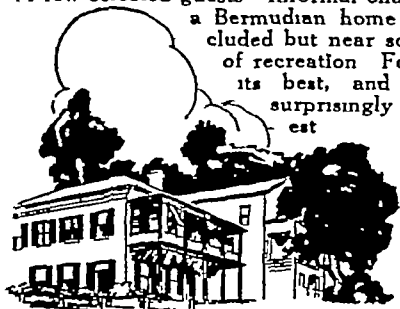
THE AMERICAN HOUSE

Nothing formal—just primarily for rest and freedom from conventional rules, yet equal to satisfying the crave for 'social whirl' when desired. Fresh foods, delightful rooms. Special rates for families, and long stays.



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A few selected guests. Informal charm of a Bermudian home. Secluded but near sources of recreation. Food at its best, and rates surprisingly modest.



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A private hotel accommodating only a small select clientele, free from the distractions and social obligations of hotel life. A most ideal retreat for those desiring or requiring a restful atmosphere, and the finest of nourishing fresh home-cooked food. Rates reasonable and furnished on application to the manager—P. W. McNeill.

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Single Rooms . \$3 00 per day
Double Rooms . \$4 00 per day

Hotel
LA SALLE

30 EAST 60TH STREET
NEW YORK CITY

(Continued from page xl)

lightships from which he is receiving the signals, he is able to ascertain his true position.

Distance Indicator—This instrument is worked in conjunction with the ship's wireless and is used for ascertaining the distance from any given lightship.

Direction Finder—This is an instrument for receiving signals from various land stations and lightships. Each station has its own distinctive call. The man operating the direction finder aboard the *Queen Mary* turns his dial until he has tuned in a certain station call at its strongest point. He then tunes in another station until he is receiving the call as strongly as possible. Next he takes his chart and draws lines from the stations to the positions where he received the signals. The position of the *Queen Mary* is where these two lines cross on the chart.

Fathometer—Twenty-four times a minute this instrument records on a graph the depth of the ocean bed beneath the ship's keel. It is entirely independent of any other instrument. Recordings are made by means of sound. A transmitter, somewhat like a hammer, sends sounds through the ship's skin (hull) to the bottom of the sea. These sounds, or echoes, are picked up by another instrument on the ship known as a hydrophone. The depth recording is made by instruments which measure the time it takes for the echo to return to the ship. This instrument takes the place of the old lead soundings, and eliminates any chance of human error, as well as giving more frequent readings. However, the hand line also is used on this vessel when the navigating officer wishes to ascertain the type bottom—whether it is sand, gravel, mud, etc. Particles from the bottom adhere to soap in a cavity in the bottom of the lead weight.

Revolutions Indicator—There are four of these and they indicate the revolutions per minute of each of the four propellers.

Hydraulic Door Closer—This instrument shows the location of all water-tight doors on D and E decks. During foggy and dangerous weather these doors are all closed from the bridge by means of this instrument. It rings a bell at each location to indicate the door is being closed, and a red light shows on the diagram when it is closed. If this door is opened, the bridge is immediately informed when the light goes out. However, all doors can be opened by hand and will close automatically again when the instrument is in operation.

Siren Buttons—These are used to sound the three giant sirens, which can be blown singly or in unison, according to the button pushed. A fourth button is for automatic sounding.

t. i. d.

"Three times a day" does not have to be prescribed for guests of the Flanders—for no one who has ever sat down to a meal here, ever neglects his "t. i. d." But it's not the excellent food alone that makes this the outstanding family hotel of the "World's Playground"—beds like those at home, comfortable places to lounge indoors and out, and friendly types of guests both young and old, also help make it the preferred seashore hostelry. As convenient to all points of interest as it is to all vacation budgets. Same family management 35 years

AT THE FLANDERS ATLANTIC CITY

During fog, this button is pushed and causes the sirens to sound every five seconds. It also causes steam to be ejected from the sirens to show other vessels where the sound is emanating from.

Electric Anchor Telegraph—This is used to signal the seamen to hoist or lower the anchor.

Stern Bridge Telegraph—This instrument is used to signal the officer on the stern bridge when the liner is pulling into or backing out of her dock.

Ship's Telephone—This is connected to the stern bridge, crow's nest, forward (front) and after (back) decks, forward mooring space

and to other parts of the ship to give necessary verbal orders.

Navigation Lights Indicator—This is a large glass enclosed in a frame and shows the position of the masthead, green starboard, red port, and after mast stern lights. If one of these fails a bell starts ringing and shows which light is out.

Clearview Screen—This is a circular glass fitted in the forward windows of the bridge. During fog, rain or snow the navigating officer starts this glass revolving by means of a high speed motor. Its speed throws every-

(Continued on page 417)

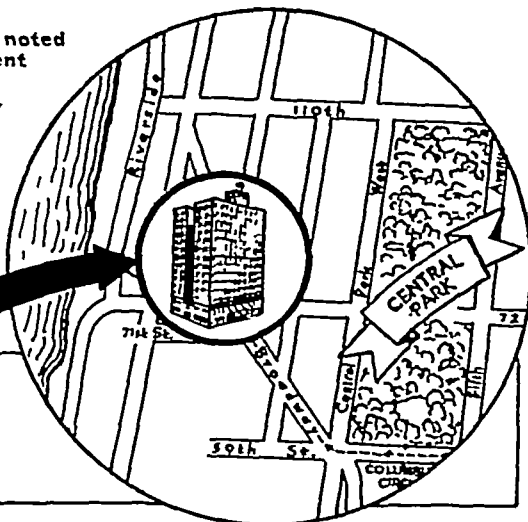
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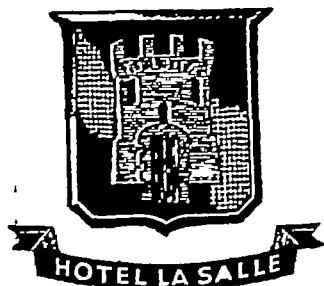
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Weekly, Monthly or Yearly Rates

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Double Rooms \$4 00 per day

Hotel
LA SALLE

30 EAST 60TH STREET
NEW YORK CITY



(Continued from page xi)

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Arc Searchlights—There are two of these mounted above the wheelhouse. They are 18-inch, high intensity lights, throwing a light of thirty million beam candle-power.

Master Clock—This clock operates all electric clocks aboard ship. It is from here that the clocks are either set forward or backward as the case may be when passing the various time belts.

The instruments mentioned in the foregoing are only the more important ones on the bridge of the *Queen Mary*. There are many similar instruments on the open bridge above the pilot house and on the stern bridge. Also there are talking tubes and whatnot. But Mr. Grindrod, whose knowledge of the sea dates back thirty-six years, his first seven being in sail, thought your correspondent—a mere beginner—had had enough for one session.

* * *

Travel Brevities

AMONG MANY physicians enjoying a brief respite from practice at the Marlborough-Blenheim, Atlantic City, Dr. Victor L. Peirce of Brooklyn and Dr. and Mrs. Jno. Gried, Jr., of Paterson, N. J., were guests recently.

THE ST. GEORGE in Bermuda recently played host to Dr. F. H. Pizzi of New Jersey, Dr. Harvard Kelman of New York, Dr. B. T. Baker of New York, Dr. James S. Marshall of New York, Dr. Chas. W. Lester of New York, and Dr. Ernest Gennell of Newark.

GRACE LINE PASSENGERS of the past few sailings included Dr. G. W. Cramp of New York who is taking the 39-day Peru cruise.

INCLUDED among many doctors stopping at the Castle Harbour in Bermuda is Dr. M. Maltz, Dr. and Mrs. I. Fink, and Dr. and Mrs. Lazarus, all of New York.

IN ATLANTIC CITY, doctors registered at the Senator included Dr. and Mrs. J. Y. Cohen, Dr. and Mrs. Bruckheimer, and Dr. and Mrs. Joseph Popper, New York doctors.

AT THE SEASIDE, Atlantic City, Dr. and Mrs. Eugene Engel of Newark, Drs. H. D. Bucalo and G. J. Signorelli of Brooklyn, and Dr. and Mrs. J. D. Reichard of St. George, were among those recently registered.

PASSENGER LISTS of the Cunard White Star Line included the following among recent arrivals and sailings—Dr. Owen McMillan, Dr. A. D. Lindsay, Dr. and Mrs. Harry Van Vickers, Dr. and Mrs. John S. Frank, Dr. and Mrs. DeWitt Hall, Dr. B. T. Simpson, and Dr. Roland B. Whitridge.

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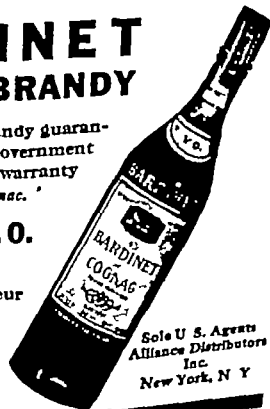
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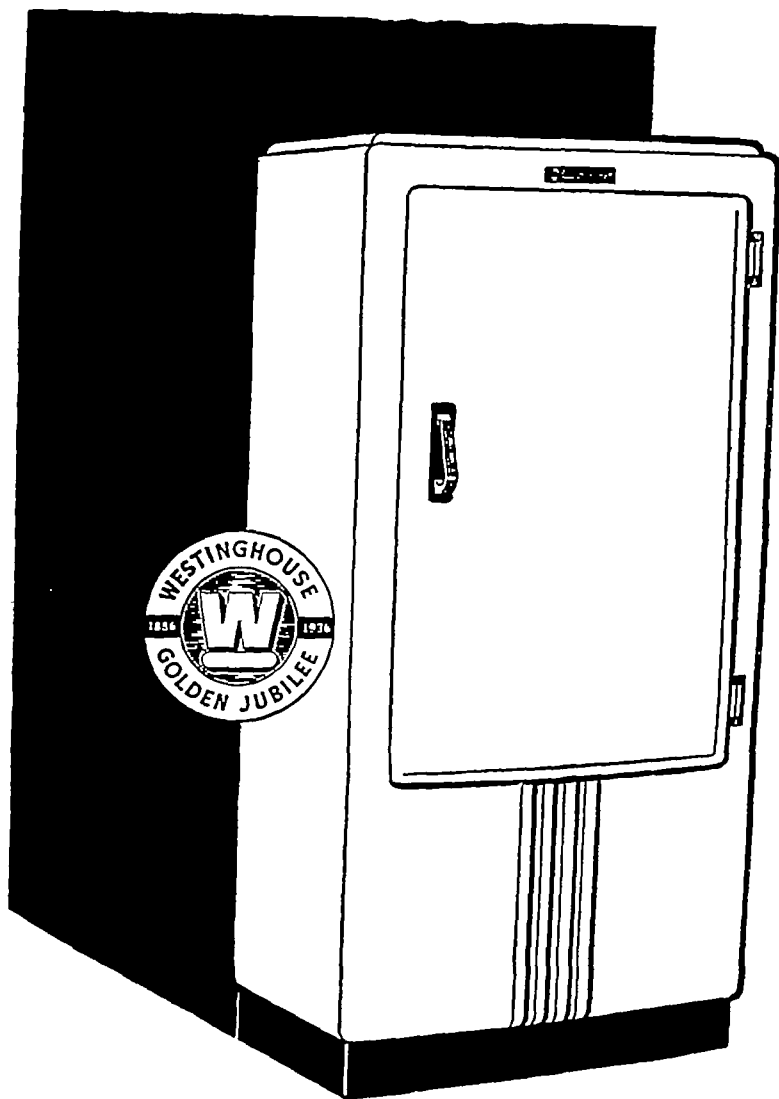
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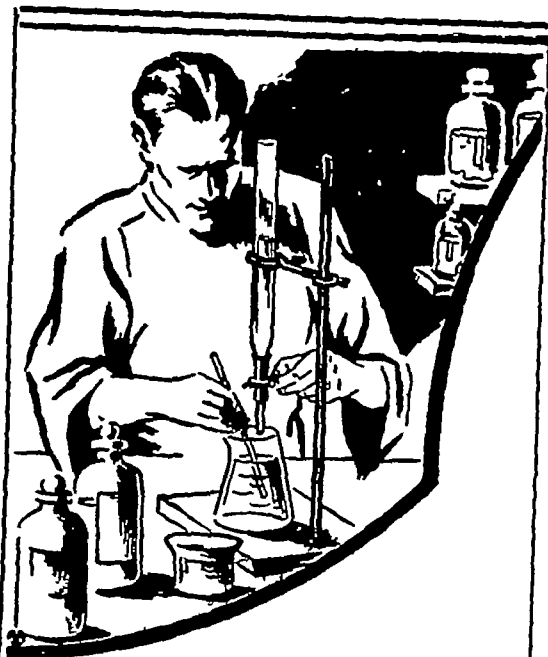
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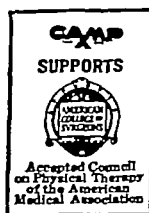
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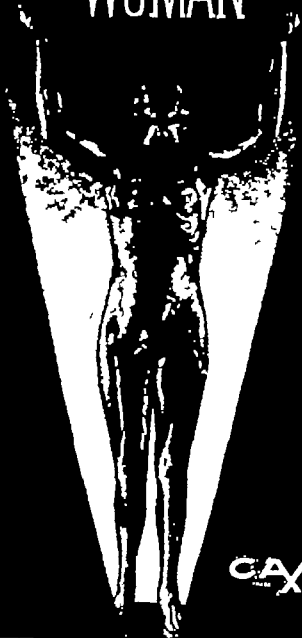
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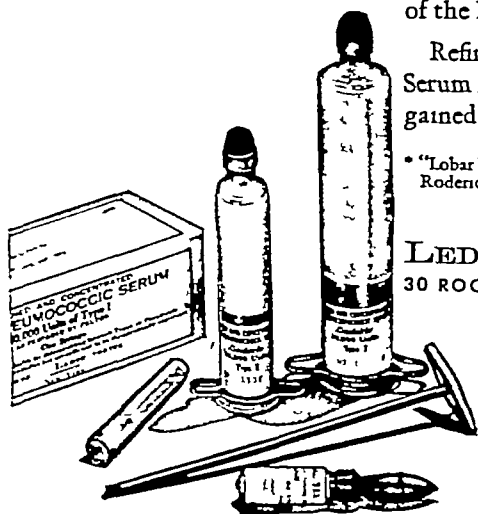
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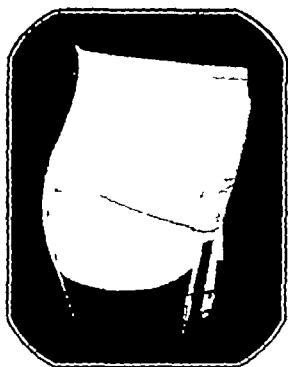
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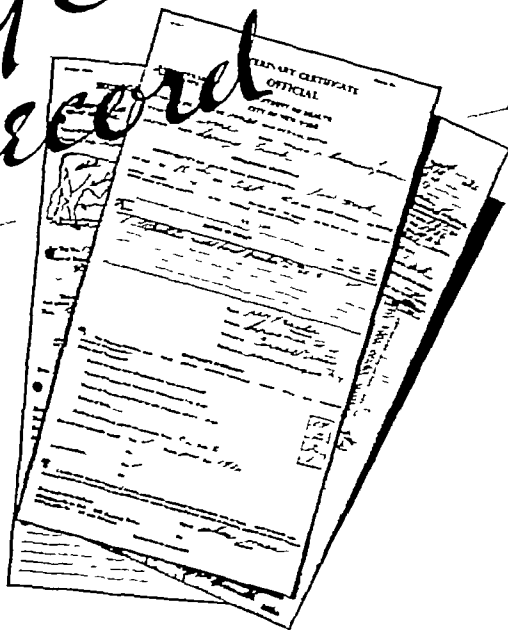
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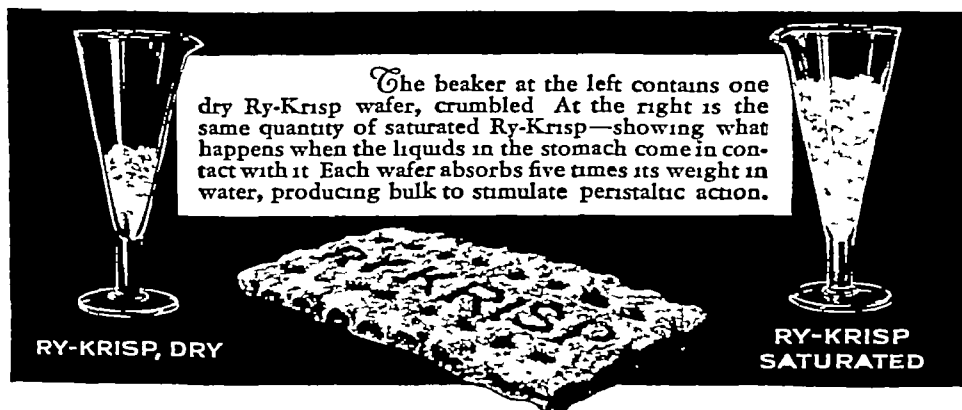
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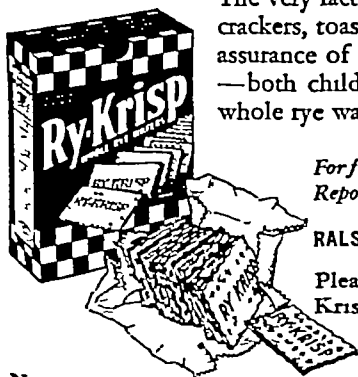
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VITAMINS IN CANNED FOODS

V. VITAMIN G

● By 1926, it was apparent that the anti-neuritic vitamin B of earlier investigators was in reality a combination of several vitamins. In that year, Goldberger postulated the existence of a second vitamin associated with the so-called vitamin B "complex" which he designated as the P P or pellagra preventive factor. Evidence has been offered that this factor—subsequently named vitamin G—exerts a specific action in the cure and prevention of human pellagra and a similar condition in experimental animals (1).

Since Goldberger's pronouncement, considerable research has been devoted to resolution of the vitamin B complex and, what is equally important, to testing the specificity of vitamin G in the cure of human pellagra (2).

The findings in the laboratory and clinic have not, in some respects, been entirely in accord (3).

As reports of further investigations appeared in the literature, it became clear that the vitamin B complex had been aptly named. At one time claims were made for the existence of as many as eight factors in this complex (4).

While later work has reduced this number, we know today that what has been considered in the past as vitamin G is, in

reality, a combination of several factors. A relation between experimental cataract and vitamin G has been described and, recently, another associated factor was postulated (5).

The significance of these individual factors in human nutrition has not as yet been established. However, regardless of this fact, students of nutrition are agreed that we must provide for the inclusion of so-called vitamin G—admittedly a complex—in the daily dietary. It is also obvious that until more is known about the individual components of the complex, we must continue to depend upon present day bioassay methods to determine the "vitamin G" potencies of foods.

In this connection, many canned foods have been found by comparative studies to retain their original vitamin G potencies as measured by methods now in common use (6).

Investigators in the U S Public Health Service have described their values in the control of human pellagra (7).

Commercially canned foods, therefore, may be used with confidence that they will supply amounts of vitamin G consistent with the amounts present in the raw food materials.

AMERICAN CAN COMPANY

230 Park Avenue, New York City

(1) 1926. U S Pub Health Report #1 297

(2) 1934. Am. J. Med. Sci. 117 512.

(3) 1935. J. Am. Med. Assoc., 104 1377

(4) 1932. J. Am. Med. Assoc. 99 120

(4) 1933. J. Nutrition 6 559

(5) 1934. J. Nutrition 7 97

1936 Science 83 17

(6) 1932. J. Nutrition 5 307

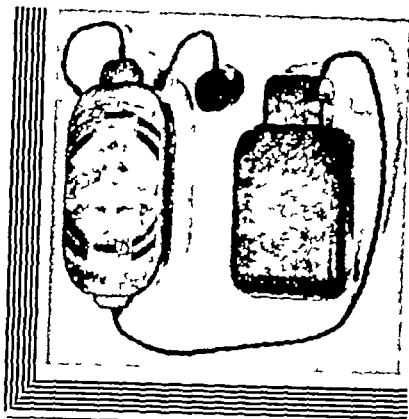
1932. Ind. Eng. Chem., 24 457

(7) 1932. J. Am. Med. Assoc. 99 95

This is the eighteenth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N Y, what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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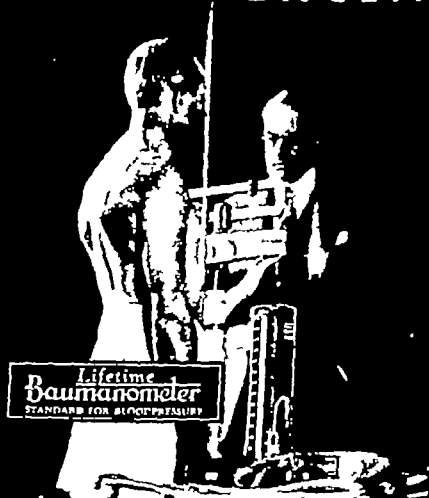
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The Journal of the American
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Pioneer Publications, Inc.

Dept 22A11, 1270 Sixth Ave.

Radio City, N Y C

**TREATMENT OF SYDENHAM'S CHOREA WITH TYPHOID
PARATYPHOID VACCINE**

DONALD WEISMAN, M D and CHARLES LESLIE, M D, *New York City*
New York Post-Graduate Medical School and Hospital, Department of Pediatrics

Introduction

The treatment of Sydenham's chorea by means of the intravenous injection of typhoid paratyphoid vaccine has caused much discussion in recent years. There has been some difference of opinion in regard to the efficacy of the method, its apparently unpleasant nature, and its dangers. We have analyzed the effects of this treatment on fifty rather severe cases and present an evaluation of the therapy. A comparison with seventy-five cases treated on this service with miscellaneous methods, and a review of other treatments are included.

Historical

The abrupt cessation of symptoms when a choreic child contracted an intercurrent acute febrile disease has been occasionally commented upon. It was mentioned as early as 1818 by Nathaniel Chapman.¹ Turnovsky² (1930) witnessed a case of chorea which was cured by intercurrent typhoid fever. There have been several reports on the treatment of chorea by intramuscular milk injections with varying success, notably Kern,³ Hymanson,⁴ and Somogyi.⁵ Mas de Ayala⁶ inoculated a child with *Treponema* *Hispanicus* who had had chorea for two years, thus producing experimental relapsing fever. The child was well after four febrile episodes.

Sutton,⁷ working independently, induced high temperatures of short duration by the intravenous injection of typhoid paratyphoid vaccine. There was

striking success, and Sutton and Dodge⁸ reported in detail on 150 cases treated in this fashion. The average duration had been shortened for all degrees of severity of chorea and the percentage of cures was high. (The term "cured", as used in this paper, applies to a single attack.)

Material and Methods

The subjects of this series were fifty children with moderately severe to violent chorea. More than thirty children with mild symptoms were not accepted for the vaccine treatment for several reasons. *First*, it is usual for mild symptoms to subside slowly with rest and sedatives alone, and therefore it was felt that these cases did not provide a sufficiently rigorous test of the efficacy of the method. *Second*, although Sutton and Dodge had recommended vaccine treatment for mild cases with the hope of aborting subsequent severe symptoms, very few of our mild untreated cases became more severe. We did not therefore consider it justifiable to submit these mild cases to a somewhat drastic therapy.

The moderate group (16%) comprised children who had fairly constant purposeless movements, beginning dysarthria, and grimaces.

The severe group (76%) consisted of children who had marked dysarthria and severe incessant movements, they were unable to feed themselves and exhibited frequent facial contortions.

The violent group (8%) were children who were considered equal to the most

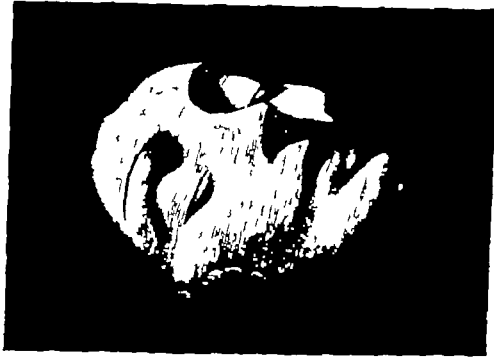
*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 28, 1936*



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**TREATMENT OF SYDENHAM'S CHOREA WITH TYPHOID
PARATYPHOID VACCINE**

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Introduction

The treatment of Sydenham's chorea by means of the intravenous injection of typhoid paratyphoid vaccine has caused much discussion in recent years. There has been some difference of opinion in regard to the efficacy of the method, its apparently unpleasant nature, and its dangers. We have analyzed the effects of this treatment on fifty rather severe cases and present an evaluation of the therapy. A comparison with seventy-five cases treated on this service with miscellaneous methods, and a review of other treatments are included.

Historical

The abrupt cessation of symptoms when a choreic child contracted an intercurrent acute febrile disease has been occasionally commented upon. It was mentioned as early as 1818 by Nathaniel Chapman.¹ Turnovsky² (1930) witnessed a case of chorea which was cured by intercurrent typhoid fever. There have been several reports on the treatment of chorea by intramuscular milk injections with varying success, notably Kern,³ Hymanson,⁴ and Somogyi.⁵ Mas de Ayala⁶ inoculated a child with *Treponema* *Hispanicus* who had had chorea for two years, thus producing experimental relapsing fever. The child was well after four febrile episodes.

Sutton,⁷ working independently, induced high temperatures of short duration by the intravenous injection of typhoid paratyphoid vaccine. There was

striking success, and Sutton and Dodge⁸ reported in detail on 150 cases treated in this fashion. The average duration had been shortened for all degrees of severity of chorea and the percentage of cures was high. (The term "cured", as used in this paper, applies to a single attack.)

Material and Methods

The subjects of this series were fifty children with moderately severe to violent chorea. More than thirty children with mild symptoms were not accepted for the vaccine treatment for several reasons. *First*, it is usual for mild symptoms to subside slowly with rest and sedatives alone, and therefore it was felt that these cases did not provide a sufficiently rigorous test of the efficacy of the method. *Second*, although Sutton and Dodge had recommended vaccine treatment for mild cases with the hope of aborting subsequent severe symptoms, very few of our mild untreated cases became more severe. We did not therefore consider it justifiable to submit these mild cases to a somewhat drastic therapy.

The moderate group (16%) comprised children who had fairly constant purposeless movements, beginning dysarthria, and grimaces.

The severe group (76%) consisted of children who had marked dysarthria and severe incessant movements, they were unable to feed themselves and exhibited frequent facial contortions.

The violent group (8%) were children who were considered equal to the most

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violent cases the staff had ever seen. They could not speak, purposefully hold their arms in any position, or grasp an extended object. They writhed in their sleep. We were concerned with the possibility of these children injuring themselves.

Artificial hyperpyrexia of 105° - 107° F was induced by the intravenous injection of the vaccine. Until the disappearance of the chorea, this was done daily, except for visiting days and for times when other demands upon our nurses made it advisable to omit treatment for a day. In our experience, temperatures under 107° F were not dangerous, however, those which exceeded 107° were invariably amenable to simple measures.

Only one temperature rose to alarming heights, this reached 109.2° but thirty-five minutes later, following remedial measures, it had dropped to 104.6° and then steadily down to normal. There were no ill effects discernible. This occurred in an early case and took place because too little attention had been focused upon the significance of chills which always signify a rapidly rising temperature.

Hench⁹ reported on 10,000 intravenous injections of typhoid paratyphoid vaccine in about 2,500 patients. His patients were adults, far less thermolabile than children, and without the recuperative powers of children. They were the subjects of vascular diseases, arthritis, etc. His doses were smaller than ours and the temperature lower, yet some degree of protein shock was obtained. He had only three deaths, a rate of .03 per cent for the 10,000 injections. The incidence of complications was 0.5 per cent for the 10,000 injections, and the complications were appendicitis, cholecystitis, glaucoma, iritis, pericarditis, pleurisy, and similar conditions. These do not seem to us to have been related to the therapy.

Wright and his co-workers have given over 5,000 intravenous injections of typhoid paratyphoid vaccine, over a period of about five years, to adult patients with vascular disease. They comment upon the fact that these patients had very fragile vascular trees compared to our children, and that many of them had phlebitis before the start of treatment. As in

Hench's cases, the doses given were very much smaller than those we used and the resulting protein shock less severe. Yet here again, definite protein shock was the desideratum and was generally obtained. They state that ordinarily about thirty per cent of thromboangitis obliterans cases of long standing develop the anginal syndrome with or without true coronary thrombosis if untreated. It is significant that only two of their cases of thromboangitis obliterans manifested acute symptoms of coronary occlusion following the vaccine. In each instance, the coronary symptoms developed more than twenty-four hours after the return of the temperature to normal. Both of these cases had had previous attacks of acute coronary thrombosis. Wright and his co-workers admit the possibility of these incidents being due to the vaccine but feel that it is highly questionable that the vaccine played a real part. There were no other complications or deaths.

It is true that smaller doses than ours were used and lesser degrees of protein shock obtained in these two series of 15,000 injections. Nevertheless the figures are of great interest to us because the difference in patients makes the figures comparable. If we can raise the temperature of an adult with, for example, generalized arteriosclerosis and coronary disease to 102° - 104° F, then surely a child, with a comparatively elastic vascular tree and enormous recuperative powers, may safely have its temperature raised one to three degrees further.

Although the high temperatures which we achieved (105° - 107°), may seem alarming, we have had no complications or deaths, and there are but few authors who have encountered or attributed such occurrences to the intravenous vaccine.

Sutton and Dodge established the basic points of this procedure. We followed their rules as to dosage, nursing, and convalescent care with but few changes. A description of the technic is to be found in the report by Sutton and Dodge.⁸

However, two important deviations from the routine of Sutton and Dodge may well be noted. First, as discussed previously, we placed great emphasis upon the occurrence of a chill as indicating a rapidly rising temperature. The temperature was recorded every five minutes

during and following a chill until the sharp surge of mounting hyperpyrexia was over. We consider this practice to be an important safeguard.

Second, we gave large doses of sodium amytal (G 0.1-0.2) by mouth about two hours before treatment each morning. Sodium amytal was resorted to because the main objection to the vaccine treatment was that the children were uncomfortable during the period of hyperpyrexia. It was deemed necessary to alter the original technic so as to make it acceptable to the children. The sodium amytal itself probably had little if any influence upon the duration and the course of the chorea. Several children were given sodium amytal alone for six or seven days with but little effect. In addition, it will be emphasized later, in the discussion of the treatment of chorea by means of miscellaneous methods, that sedatives have not in the past been found to be of any particular value.

The sodium amytal rendered the patients less apprehensive and quite drowsy during the high temperature period. The children were made fairly comfortable and rarely objected to the treatment. They often asked "to have one more treatment, just to make sure."

We felt that the only contraindications to this therapy were concomitant conditions so severe as not to permit a patient to stand the strain of so high a temperature without danger, for example severe anemia, extreme malnutrition, cardiac decompensation, etc. Cases of active carditis with good cardiac function were treated.

Outline of Treatment

A—Material New York City typhoid paratyphoid vaccine or its equivalent is used. This preparation contains 1,000 million B typhosus, and 750 million each of B paratyphosus A, and B paratyphosus B in each cubic centimeter. The vaccine is boiled for three minutes to ensure sterility before it is used the first day, and thereafter kept in the icebox. The Lot Number should be noted carefully, the same child should always receive the same Lot Number.

The vial should be shaken vigorously before each withdrawal of vaccine. Dilution of this material for the purpose

of more accurate dosage is found clinically to be unnecessary.

Standard tuberculin syringes are used for injection. One can easily estimate differences of 0.005 c.c. Use 24G / 3/4" needles.

B—Dosage The initial dose is always 0.05 c.c. undiluted vaccine, intravenously. It is wise to proceed cautiously for the first few days so as to "feel out" the thermolability of the individual patient. Children vary greatly in their degree of reaction to the same dose.

Tolerance to the vaccine increases with each day's treatment in the large majority of cases. A dose that produces today the satisfactory temperature of 105° will, in all probability, produce only the unsatisfactory temperature of 103° tomorrow. Therefore the dosage must be constantly increased in accordance with the patient's previous reactions.

For example with dose of 0.05 c.c., if temperature goes to 105°, give 0.08 c.c. next day, if 104°, give 0.10 c.c. next day, if 103°, give 0.13 c.c. next day.

With dose of 0.10 c.c., if temperature goes to 105°, give 0.13 c.c. next day, if 104°, give 0.15 c.c. next day, if 103°, give 0.20 c.c. next day.

After the first day, a second dose or even a third is given on the *same* day if the temperature with the first dose *remains stationary* for two consecutive readings at less than 104°. This must be injected promptly so as to act as in Fig. 1a and not as Fig. 1b.

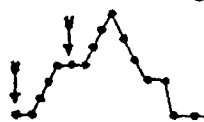


Fig. 1a



Fig. 1b

For example With initial dose of 0.20 c.c., if temperature levels at 101°, give an additional 0.20 c.c. With initial dose of 0.20 c.c., if temperature levels at 102°, give an additional 0.15 c.c. With initial dose of 0.20 c.c., if temperature levels at 104°, give an additional 0.05 c.c.

Further, if temperature goes to 105° with 0.20 c.c.+0.20 c.c., give 0.5 c.c. the next day as an initial dose. If temperature goes to 104° with 0.20 c.c.+0.20 c.c., give 0.55 c.c. the next day as an initial dose. If temperature goes to 103° with 0.20 c.c.+0.20 c.c., give 0.6 c.c. the next day as an initial dose.

The calculation of secondary dosages and subsequent day's dosages depend also upon the speed of the child's reactions. A slowly reacting child tolerates a relatively larger dose than a quickly reacting child, mainly because there is more ample warning of excessive rise and greater time in which to check it if desirable.

Subjects of repeated attacks generally require larger doses of the vaccine to produce a satisfactory change in temperature.

C—Routine nursing orders

1 High caloric and high vitamin breakfast and supper

2 No visitors during treatment, room darkened and quiet.

3 Breakfast at about 6 30 A M

4 Sodium amytal, gr $1\frac{1}{2}$ -3 by mouth after breakfast. The dose is reduced after the first few days.

5 Vaccine intravenously at about 8 30 A M

6 Hot-water bottles and blankets immediately after the vaccine. The blankets are merely placed on top of the bed since it is well-known that blanket packs alone can produce a considerable temperature rise. Therefore bundling or packing the child with the blankets are to be carefully avoided.

7 Temperature recorded stat.

8 Codeine in large doses (gr $\frac{1}{2}$ -1) subcutaneously fifteen minutes after the vaccine. It is given in the leg to avoid a sore arm around which a tourniquet must be wrapped at the subsequent treatment. The codeine is timed to act most effectively when the expected nausea, headache, and chill arrive, which is usually about twenty-thirty minutes following the vaccine. These unpleasant symptoms are most in evidence the first and second days. There may even be slight emesis the first day. They are of very short duration however, rarely disturbing the child for more than a half hour. A smaller dose of codeine is given later if the unpleasant symptoms have not subsided. After the first few days the codeine may be given by mouth just after the vaccine is administered, or may be omitted. Aspirin is contraindicated since it is an antipyretic. The amytal and the codeine act synergistically to control the discomfort. Indeed, children commonly sleep through the treatment, waking only when aroused by the temperature taking.

9 Fluids are limited during treatment to small pieces of cracked ice, or sips of plain water, carbonated water, or lemonade.

Large amounts of fluid cause a sudden fall in the temperature.

10 Temperatures must be taken with great care at the following times: each half hour to 103° ascending, each quarter hour from 103° ascending and descending, each half hour descending below 103°, each one hour descending below 102° until normal for two hours.

11 Notify doctor at once re all temperatures and chills.

12 Take temperatures *each five minutes* after chills until otherwise ordered.

13 When temperature has dropped to below 104°, remove blankets and give fluids freely. Children undergoing treatment generally have poor appetites but they usually are thirsty, so it is best to take advantage of this by giving orange juice with added sugar instead of plain water, thus aiding their nutrition.

14 When the temperature has fallen to about 101°, give the patient a tub bath and remake the bed. The fresh linen and the clean feeling make the children happy and cheerful.

15 For two consecutive temperatures over 106°

a Remove blankets at once.

b Aspirin gr xv, and icecap to head stat.

c Glass of tepid water stat.

d Notify doctor stat.

e Prepare tub bath of 100°.

16 For temperature over 107° or too rapid rise in temperature

a. Remove blankets

b Give fluids freely

c Icecap to head, notify doctor stat.

d Aspirin gr xx-xxv p o, or sodium salicylate gr xxv-xl by rectum (in starch enema), or if child is unable to swallow or cannot retain an enema, antipyrine gr ii-x subcutaneously (Antipyrine is the only antipyretic sufficiently soluble to use by hypodermic.)

e Tub bath at 100°, cooled slowly to 80° while massaging.

f Cool colonic irrigation.

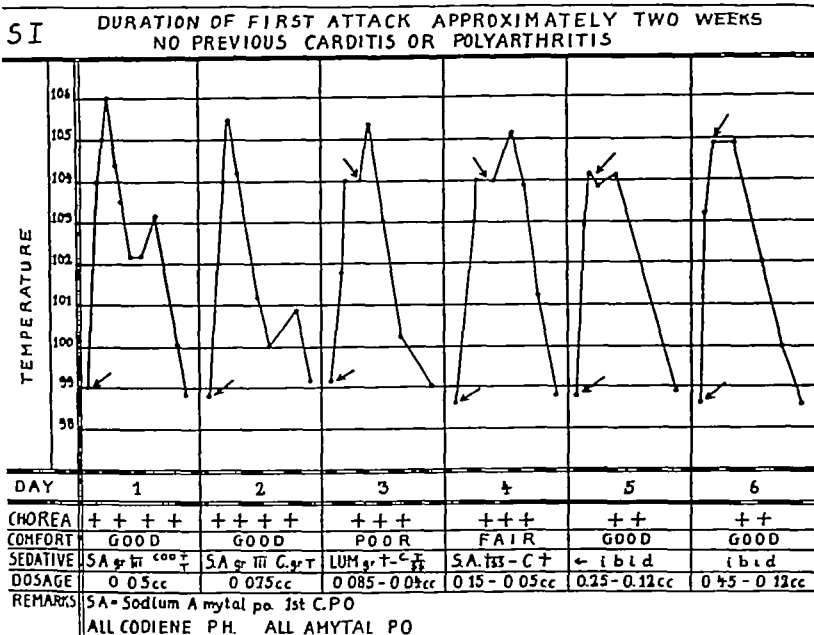
g Needle spray or cold pack with vigorous massage.

These routine orders for the treatment of hyperpyrexia may be omitted only if the person directing the treatment is on the floor and orders their omission. He may judge it wise to so order if the temperature appears to have reached a plateau level from which it will shortly descend.

Temperatures over 107° are uncommon and they have been invariably amenable to the treatment outlined above.

D—Duration of treatment The treatment should be given daily and stopped only when all the signs of chorea have dis-

CHART I

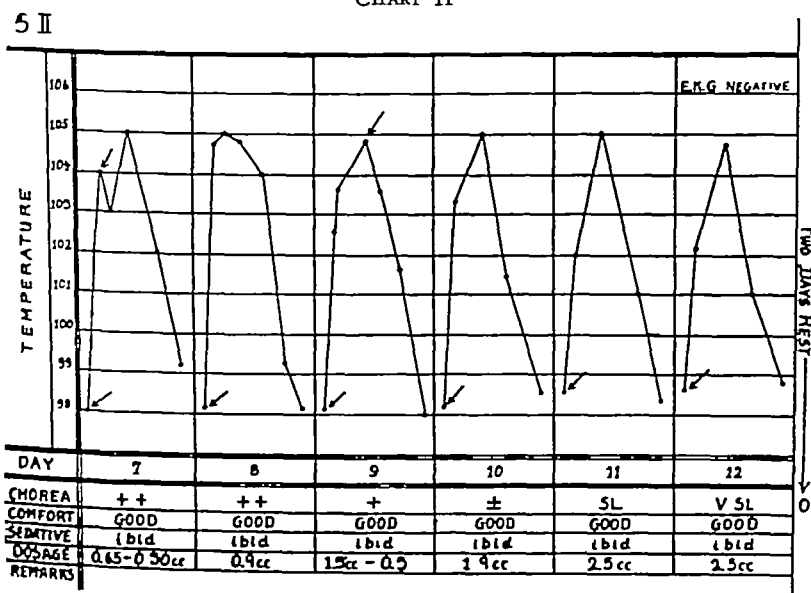


appeared except for the commonly found residual hypotonia. If seven or eight consecutive treatments do not effect a cure, the child should be given a rest for two to four days before resuming treatment. On the first day of the second

series of treatments, after a two to four day interval of rest, the same dose should be used as that of the last day of the first series.

E—Care during convalescence The child generally loses one to four pounds

CHART II



during the treatment period. Although the children stand this rather heroic therapy well and look surprisingly little worn out by it, it is customary to keep them in bed at least one week after the last treatment. If the sedimentation rate is elevated, or if there is any evidence of carditis, bed rest should be prolonged.

Patients are given a nourishing high caloric and high vitamin diet, and occupational therapy in the form of jigsaw games, weaving, and similar diversions. A two weeks sojourn in the country thereafter is very desirable.

F—General. The treatment should not be undertaken unless it is possible for all of the nursing orders to be carried out in a meticulous fashion. It must be borne in mind that it is possible for a temperature to rise four or five degrees in the fifteen minutes following a chill, and that one encounters, although rarely, children who will arrive at 106° in so short a time as three-quarters of an hour after the injection of the vaccine. The apparent fussiness in the technic detailed here is absolutely necessary to safeguard the patient. We feel, furthermore, that no one should attempt this therapy without having carried through at least six complete courses of treatment under supervision.

The course of a typical case of violent chorea is seen in Charts I-II. The improvement was rapid and complete. There were no discernible symptoms after twelve days of treatment and two days rest. It will be noticed that the temperature attained each day was very

close to 105°. Dosage was increased daily as it usually must be in order to reach the proper temperatures.

Results

Age and Sex. The females outnumbered the males by 23 to 1, the usual finding. The average age was nine years and eight months. The youngest child in the series was four years old and the oldest sixteen years.

Temperatures. Of the 433 treatments eighty-six per cent reached at least 104°, of the total treatments fifty-nine per cent were greater than 105°, twenty-two per cent greater than 106°, and six per cent greater than 107°. Capper and Bauer²⁶ state that the temperatures they achieved averaged only 102°-104°. They gave 297 injections to twenty-three patients, an average of thirteen injections per patient. We feel that the higher temperatures are more effective since our cases only required an average of 8.6 treatments per patient.

Analysis of results. A gross statistical analysis is presented in Table I. The average duration of symptoms from the inception of treatment was 12.2 days for the moderate group, 13.8 days for the severe group, and 22.5 days for the violent group. The average duration of symptoms for all groups was 14.3 days. This was longer than the average for the cases of Sutton and Dodge. However, their series included a much larger percentage of mild cases than did ours. They gave vaccine treatment to a large group of mild choreas. Such cases only re-

TABLE I

ALL CASES							
Severity	No. of Cases	Duration of Symptoms Days	Range Days	Days in Hospital	Range Days	No. of Treatments	Range
Moderate	8	12.2	7-29	26	16-43	8	5-15
Severe	38	13.8	3-35	28.4	7-60	8.7	2-22
Violent	4	22.5	7-60	42	16-113	9	5-12
Total	50	14.3	3-60	29	7-113	8.6	2-22

TABLE II

SEDIMENTATION RATES	
A. Before Treatment. (26 cases.) Average 22 mm/hr	
1 Those less than 15 mm/hr (13 cases)	Average, 6 mm/hr
2 Those greater than 15 mm/hr (13 cases)	Average, 37 mm/hr
B. Sedimentation Rates estimated throughout Treatment in 15 cases.	
1 Cases with elevated rate following vaccine, 13	
2 Average net rise, 26 mm/hr	
3 Cases with lowered rate following vaccine, 2	

TABLE III

Influence of Clinical Rheumatism on Sedimentation Rate				
	No. of cases	Duration of chorea (days)	Days of hospitalization	No. of treatments
With clinical rheumatism	22	11.7	26	8
Without clinical rheumatism	24	16.6	31	9
With normal sedimentation rate	12	15	27.3	8.5
With elevated sedimentation rate	15	18.4	43	9

quired a few treatments, so that their average number of treatments and average days duration of symptoms were less than ours

The number of treatments required, for the different degrees of severity of chorea which we treated, was surprisingly constant being eight and nine for the three grades of chorea and 86 treatments for the total average

The average length of hospitalization was twenty-six days for the moderate group, for the severe group the average was 28.4 days, and the average for the violent group was forty-two days. The average length of hospitalization for the entire series was twenty-nine days. However, this average included the children who were found to have an elevated sedimentation rate

Sedimentation rates (Westgren method) were done upon admission on our last twenty-six cases (Table II). The average rate was twenty-two mm/hr. Of these cases, thirteen had rates under fifteen mm/hr, and averaged six mm/hr. The thirteen cases with rates greater than fifteen mm/hr averaged thirty-seven mm/hr

Of the fifteen cases which had sedimentation rates estimated all throughout treatment, thirteen rose following treatment. The average net increase in rate was twenty-six mm/hr. They generally fell to normal again within seven to thirty days. Two of the fifteen fell during treatment. These two had started with rates of 127 mm/hr and twenty-seven mm/hr respectively. None of these cases with elevated sedimentation rates had demonstrable foci of infection

The vaccine treatment apparently induces an elevation in the sedimentation rate. Whether this represents rheumatic activity or simply some physicochemical shift in surface tension, cell charges, or the like, is a problem warranting further research. It probably does not indicate rheumatic activity

Those children who had an elevated sedimentation rate after their course of treatment were kept in bed until the sedimentation rate became approximately normal. The figure for that group, forty-three days hospitalization, swelled the figure for the whole series to twenty-nine days average hospitalization. Neverthe-

less, twenty-nine days is a comparatively short hospital period for chorea. If the high sedimentation rates had not influenced our management of convalescence, the hospital period for the fifty cases would average about twenty-one days

It is of interest that the children with clinical rheumatic fever (enlarged heart, apical systolic murmur, or arthritis) have the smallest average figures of any group in Table III. This may be due to statistical error consequent upon inadequate numbers

In the twenty-two cases with clinical rheumatism, the average duration of chorea was 11.7 days, the hospitalization period twenty-six days, and the number of treatments eight. The twenty-four cases without clinical rheumatism averaged 16.6 days duration of symptoms, thirty-one days hospitalization, and nine treatments. The twelve children with normal sedimentation rates had symptoms for fifteen days, were hospitalized an average of 27.3 days, and had an average of 8.5 treatments. Those with an elevated sedimentation rate, fifteen cases, had their symptoms last for 18.4 days, their hospitalization averaged forty-three days, and they required an average of nine treatments

In such a small series, fine division of the figures into so many categories can be only suggestive at best. It seems, however, that the cases with an elevated sedimentation rate had a longer duration of symptoms than cases which came under any of the other classifications in Table III

Asche and Einhorn,¹⁰ in a recent publication, voice the fear that protein shock may activate a dormant rheumatic fever. Of their seventeen cases of chorea to whom typhoid paratyphoid vaccine was given intravenously, three showed increasing carditis during treatment, one case terminating fatally six weeks after the last injection. They quote Jones¹¹ who reported that of twelve patients who were given typhoid vaccine therapy during their convalescences from acute rheumatic fever, six cases developed exacerbations of their rheumatic fever in from twenty-four hours to three weeks

It appears to us that these episodes may have been relapses rather than recrudescences. It is not uncommon to en-

TABLE IV—Incidence of Rheumatic History, Heart Lesions, and Sequellae

Number Percentage Recurrences	Without rheumatic history or clinical rheumatism	With rheumatic history and/or clinical rheumatism		
	24 cases 48% 12% Three developed apical systolics 6 months to 2 years later Three had recurrences about one year later	Joints 5 cases 10% 40%	Frequent tonsillitis 6 cases 12% 0	Enlarged heart with apical systolic 20 cases 40% including 5 cases of previous 2 columns 5%
Sequellae and remarks		Two had apical systolics on admission Two had recurrences in about one year	Three had apical systolics on admission	3 (15%) had negative hearts following treatment. 1 had an exacerbation of carditis in 14 months. 1 had arthritis 2 months later 1 had a recurrence 1½ years later

Previous chorea alone is not taken as de facto evidence of rheumatic history

TABLE V—Comparison with Other Treatments
The Duration of Chorea when Treated with Miscellaneous* Remedies

Observer	No of cases	Severity of cases	Method of treat- ment	Result				Duration of sym- ptoms	Days in hospital	Remarks
				Complica.	Cured	Impr	Un- impr			
Oser	544	Mod.	Misc.	*	*	*	*	63	*	†Not noted in source.
Huddleston	*	*	*	*	*	*	*	77	*	
Holt & Howland	*	*	*	*	*	*	*	56	*	
Abt & Levinson	226	*	*	*	*	156	70	*	31 5	Other 70 cases not discussed
Rilliet & Barthez	*	*	*	*	*	*	*	59	*	
Rufz	*	*	*	*	*	*	*	31	*	
Dufosse	*	*	*	*	*	*	*	57	*	
See	117	*	*	*	*	*	*	69	*	
Wicke	*	*	*	*	*	*	*	87	*	
Mognier	*	*	*	*	*	*	*	56	*	
Sachs	*	*	*	*	*	*	*	55	*	
Sutton	63	*	*	*	55	0	8	47	47	
Sutton	150	Mild 48 Mod 57 Sev 25	*	*	*	*	*	42 6	*	
Ray & Cunningham	11	Mild 5 Mod 4 Sev 3	*	0	11	0	0	115	*	
Weisman & Leslie	75	Av	*	†	7	59	9	33	33	
Average all ob- servers	Unk.	Unk.	*	Unk.	Unk.	Unk.	Unk.	60 5	37	

TABLE VI—The Duration of Chorea when Treated with Nirvanol** or Calcium

Observers	No. of cases	Severity of cases	Treatment	Results				Duration of symptoms	Days in hospital	Remarks
				Complica.	Cures	Impr	Un- impr			
Ray and Cunningham	13	Mild 2 Mod 5 Sev 6	Nirvanol	0	13	0	0	31	*	*Not noted in source
Paynton and Schlesinger	8	Mild 1 Mod 4 Sev 1	Nirvanol	0	5	0	1	25†	*	†Average given only for 5 cures.
Filcher and Gerstenberger	15	Mod.	Nirvanol { See Remarks }	2	5	8	*	*	*	One case developed severe pulmonary disease
Silber and Epstein	28	Mild 18 Sev 10	Nirvanol	0	10	0	18	*	30	
Monfort	24	*	Nirvanol	1 death	19	3	2	24‡	*	
Dennet and Wetclier	72	Mod.	Nirvanol { See Remarks }	72	0	0	21	*	*	{ 13 recurred in 1st 6 to 12 months. 1 death in subsequent case.
Leichentratt et	20	*	Nirvanol	0	16	4	0	*	*	
All Observers	178	Mod.	Nirvanol { 1 pneumonia 2 death }	137	12	29	25 4 av			†Only one figure in source
Mutch	19	*	{ Calcium Aspirin }	0	All had symptoms	{ Arrested }	17	*	*	Arrested is not defined.
Weisman and Leslie	5	Mild	{ Calcium Gluconate }	0	0	0	5 { See Remarks }	See Remarks	See Remarks	Subsequently given other treatment.

** Methyl-Ethyl-Hydantoin

counter occasional flare-ups during the convalescence of rheumatic carditis. Table IV shows that only three cases (12%) of our choreas without rheumatic history or clinical rheumatism on admission subsequently developed permanent apical systolic murmurs. In evaluating the appearance of a systolic murmur at the apex in these three cases subsequent to vaccine therapy, it should be borne in mind that a not inconsiderable percentage of choreic children develop rheumatic heart disease during or following their chorea, even when treated with rest and sedatives alone. We believe an incidence of twelve per cent is rather small.

This table also shows that of the twenty cases with mitral insufficiency on admission only one went on to an exacerbation of his existing carditis following treatment. The exacerbation took place fourteen months after discharge. One of these cases had a mild attack of arthritis two months later.

On the other hand, three cases (15%) of this cardiac group were found to have entirely negative hearts shortly after treatment and their hearts remained so on follow-up. We did occasionally find a transient apical systolic murmur without enlargement during or immediately after treatment. This disappeared within a few days. On clinical grounds we do not share the concern of Asche and Einhorn, in which we are supported by the recent opinion of Sutton and Dodge.

It will be noticed in this table that five children were admitted with the history of joint pains, and six admitted with the history of frequent tonsillitis.

Effectiveness of treatment. Upon discharge forty-six of our cases, or ninety-two per cent, were completely symptom free. Two children were only somewhat improved but were among our early cases and should perhaps have been more vigorously treated. Only two children failed completely to benefit from the treatment. These two subsequently developed the mask-like facies and diminution of associated movements characteristic of the postencephalitic syndrome. We have tried vaccine therapy upon known postencephalitics to no avail. However, an occasional failure is to be expected, the percentage of refractory children is very small.

Recurrences. Five of our cases (10%) have had a total of six recurrences in the one-three year follow-up period to date.

The clinical estimations of the duration of choreic symptoms, when treated with miscellaneous remedies, are classified in Table V. Many of the observers did not report the number of cases they had seen. However, from the figures available, there are well over 1300 cases reported. It will be seen that the average duration of symptoms, for all observers, is 60.5 days. No complications were reported. Our series of seventy-five cases is included. Our cases were those treated on this service prior to 1930. They were well distributed into the three groups of mild, moderate, and severe. The remedies used for our cases and for the cases of the other observers listed in Table V were manifold. They included simple bed rest, sedatives, baths, warm packs, cool packs, salicylates, thyroid extract, massage, electrotherapy, Small's serum, intraspinal autoserum, and many medications, chief of which was Fowler's solution. In addition, various diets were used, among them being the high carbohydrate, the ketogenic, and the starvation diets. We feel that this group of over 1300 cases may be taken as a control group, and that 60.5 days may be considered a rough estimate of the duration of untreated or symptomatically treated chorea.

Nirvanol (phenyl-ethyl-hydantoin) was introduced in 1919 for the treatment of chorea by Roeder.¹⁸ It has since been subjected to a wide clinical trial, principally in Germany, England, and the United States. There has been considerable disagreement about its values and its dangers. Unfortunately the available articles contain somewhat incomplete statistical analyses, thus making comparison with other methods difficult. In the total series of 178 cases, there were two deaths and one severe pneumonia reported (Table VI). One hundred and thirty-seven cases (77%) were reported cured, twelve (6%) improved, and twenty-nine (17%) unimproved. The duration of symptoms for all the observers quoted averaged 25.4 days per case. It is evident that severe complications and fatalities have been noted.

It is a matter of interest that at least

sixty per cent of the children treated with nirvanol run a temperature of 102°-104° for a few days. The hypothesis that this hyperpyrexia is to some extent responsible for the beneficial effects of nirvanol is not entirely unlikely.

Nirvanol is a proprietary drug imported from Germany. The different lots received often seem to vary greatly in toxicity and it is necessary to do white and differential blood counts at least as often as every other day. The effect of the drug is cumulative and nirvanol poisoning is the end point desired. This end point seems perilously close to agranulocytosis. The variable potency of the drug, the frequent blood counts, the longer duration of symptoms, and the longer hospital stay, are factors to be considered when comparing this method of treatment to the vaccine method. The vaccine method requires only two blood counts, one before and one after the series of injections, the vaccine is inexpensive, readily available, and well-standardized, and the hospital stay is comparatively short. The complications and fatalities reach a significant number

with the nirvanol treatment, the vaccine treatment seems free of such.

The calcium-aspirin therapy recommended by Mutch²⁵ does not seem to offer much promise. Mutch reports that his seventeen cases all had "their symptoms arrested" however, the term "arrested" is not defined. We gave calcium-gluconate intramuscularly (10 c.c. twice a day for five days) to five mild choreas with no demonstrable benefit.

Table VII contains an analysis of all the larger series of choreas treated with intravenous typhoid paratyphoid vaccine including our own. Of the total 270 cases, 246 (92%) were cured, six (2%) improved and eighteen (6%) unimproved. The average duration of symptoms, from inception of treatment, was 11.9 days. There were no noteworthy complications attributable to the treatment.

Table VIII compares the grouped results of the reports on nirvanol with the grouped result of the reports on typhoid paratyphoid vaccine. Of the 178 cases treated with nirvanol, seventy-seven per cent were cured, of the 270 cases treated with typhoid paratyphoid vaccine, ninety-

TABLE VII—The Duration of Chorea when Treated with Typhoid-Paratyphoid Vaccine

Observer	No. of cases	Severity of cases	Treatment	Complic.	Result			Duration of symptoms	Days in hospital	Remarks
					Cured	Impr.	Un-impr.			
Sutton	24	†	Vaccine	0	24	0	0	8.3	†	† Not noted in Source.
Capper and Bauer	23	Mod.	"	0	19	3	1	†	†	
Monfort	23	†	"	0	22	1	0	16.6	†	{ Compare to Monfort, Table IX. No Recurrences or Carditis.
Sutton	150	{ Mild. 49 Mod. 68 Sev. 33 }	"	0	135	0	15	8.5	†	
Asohe and Einhorn	17	†	"	0	†	†	†	†	†	{ 1 death from Carditis 6 weeks after last injection.
Weisman and Leslie	50	{ Mod. 8 Sev. 38 Violent 4 }	"	0	46	2	2	14.3+	29	
All Observers	270	Mod.-Sev.	"	0	246	6	18	av. 11.9	29+	+Only one figure in Source.

TABLE VIII

Treatment	% Cure	% Imp.	% Unimp.	Duration of Symptoms (days)	Complications
Nirvanol	77%	6%	17%	25.4	{ 2 death. 1 pneumonia
Vaccine	92%	2%	6%	11.9	0

TABLE IX—Influence of Duration before Admission on No. R. necessary

Severity	1-21 days	22-42 days	> 42 days
Moderate	7	2	5
Severe	8	5	5
Violent	8	0	0
All cases	8 (19 cases)	9 (17 cases)	9 (10 cases)

Average duration before admission — 40 days.

Range — 7 to 180 days.

Average number of treatments all cases — 8.6.

two per cent were cured. There were six per cent improved with nirvanol, and two per cent with vaccine, there were seventeen per cent unimproved with nirvanol, and only six per cent unimproved with vaccine. The duration of symptoms with nirvanol averaged 25.4 days while the duration of symptoms averaged only 11.9 days with the vaccine. Two deaths and one pneumonia were reported following the use of nirvanol therapy, there were no noteworthy complications with vaccine.

Discussion

Sydenham's chorea is ordinarily a self-limited disease. A majority of the children recover from their symptoms in approximately eight-ten weeks. Why then should so much concern be manifested in this syndrome and so much endeavor be directed towards remedial measures? There are several reasons. A choreic child is an unpleasant sight to others and to himself, and is very unhappy, he is a vulnerable subject for psychic trauma. It is common knowledge that a relatively high percentage of these children become introverted, neurotic, and even psychotic adults.

It might be argued that since chorea is ordinarily self-limited, many of our cases were about to undergo spontaneous remission at the time when vaccine therapy was initiated. For the moderate cases with a duration of less than twenty-one days of symptoms before admission an average of seven treatments were necessary, the moderate cases with a history of symptoms for twenty-two to forty-two days previous to admission required an average of 7.2 treatments, and where the symptoms had been noticed in the moderate group for more than forty-two days prior to admission, 13.5 treatments (Table IX).

The severe group required 8.4, 9.5, and eight treatments respectively for the three different classifications of duration of symptoms prior to admission. The violent group were all brought to us in less than twenty-one days after the onset of symptoms. Our fifty cases had an average history of a forty day duration of symptoms before admission.

Of all cases, nineteen had had symptoms for less than twenty-one days and required an average of eight treatments, seventeen had had symptoms for from twenty-two to forty-two days and required an average of nine treatments and ten had had symptoms for more than forty-two days before coming to the hospital and needed an average of nine treatments. The average number of treatments for all cases was 8.6. These figures show, therefore, that it was fully as difficult to cure those children with a very long history of chorea as it was to cure those whose history only dated back to twenty-one days or less. There are

four cases classified in the last column whose chorea had been evident for more than six months.

For many years there has been considerable interest centered on the question of the relationship of chorea to rheumatic fever, and especially rheumatic carditis. The coincidence of chorea and carditis has been estimated to be as low as twelve per cent and as high as seventy-two per cent (Table IV). Forty per cent of our cases had enlarged hearts with apical systolic murmurs on admission. As mentioned before, only three of our cases or twelve per cent were found to have acquired rheumatic heart disease subsequent to treatment, and only one case, of the group admitted with rheumatic heart disease, later went on to an exacerbation, while three of the group admitted with rheumatic heart disease were found to have negative hearts following treatment. We have had to date a total of but six choreic recurrences in five children in the one to three year follow-up period.

So it may be possible that by aborting chorea we are reducing the duration of the rheumatic infection and the possibility of more serious rheumatic episodes, as well as benefiting existing rheumatic heart disease, as claimed by Sutton and Dodge.

It seems justifiable to us to treat these children with this admittedly drastic treatment until a more ideal method is found.

It is comparatively inexpensive, safe if competently supervised, and promises a short hospital stay. It offers a high percentage of cures, and what effect it has upon active carditis seems to be beneficial. If chorea is to be treated, in a hospital, by measures other than simple bed rest and sedatives, we feel that the vaccine treatment is at present the treatment of choice.

Conclusions

1. Fifty cases of severe chorea were treated with intravenous typhoid paratyphoid vaccine.

2. Ninety-two per cent were cured. There were no ill effects.

3. Ten per cent had a total of six recurrences one-three years following treatment.

4 The treatment compares favorably with the nirvanol treatment and other measures

5 Active carditis does not seem to be a contraindication to this treatment

6 Meticulous care in dosage and nursing is essential, the method is safe in experienced hands

7 It appears to be the hospital method of choice at present

Acknowledgment is made to Dr Adolph G DeSanctis, Director of the Pediatrics Department, New York Post-Graduate Medical School and Hospital, for his kindness in authorizing this work.

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POST-GRADUATE HOSPITAL

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Discussion

DR PAUL W BEAVEN, *Rochester, N Y*—In the last few years artificial fever has been used therapeutically in a number of diseases, notably pneumonia, paresis, arthritis, chorea, and gonorrhea. The chief method of producing fever has been by inoculating intravenously typhoid paratyphoid vaccine. Malaria has been given to paretic cases simply for the fever it induces, and the so-called "fever cabinet" has also been used to create higher temperatures.

Dr Weisman's paper is a very careful analysis of a method of therapeusis for chorea, and one in which we are all interested. Choreia is a self-limited disease, and when it is mild, I feel as Dr Weisman does, that only simple measures are indicated. Children who have the disease severely need any treatment that is at the same time relatively harmless and effective in calming their symptoms.

At the General hospital we have used typhoid paratyphoid vaccine on a number of chorea cases, and in some the results have been amazingly good. We have had children, as did Dr Weisman, ask for more treatments. In others, however, we did not get what we considered adequate benefit. Perhaps we did not use enough of the vaccine. Dr Weisman does not give us the amount that he used. We tried to raise the fever to approximately 104° and 105°. Dr

Weisman, however, almost routinely produced 105, and occasionally 107°, and he gave it oftener and longer than we did. Our general routine was to give a treatment every three days. Our feeling was that if after three or four injections, there was no benefit, there would be none. At the Strong hospital two cases have been treated by the "fever cabinet," one of which was very much helped, but the other was not helped at all. The problem which naturally rises in this form of treatment is how long should the fever be given. More cases will have to be treated to determine the optimum time for this treatment, and to discover its contraindications and its value. I understand that such a study is being conducted at Bellevue hospital by Smith, Sutton, and Dodge.

Asche and Einhorn in Philadelphia have called attention to danger in the use of typhoid vaccine in cases of chorea which are complicated by carditis. Dr Weisman does not think carditis is a contraindication unless it is associated with signs of decompensation. Our experience would coincide with Dr Weisman's.

One modification in the technic of giving vaccine has been introduced by Dr Weisman, and I feel it is a valuable one. He quiets these children with sodium amylal before they were given their inocula-

tions I quite agree that the sodium amytal in itself would have no real beneficial effect on the length or severity of the choric symptoms

Personally, I do not share the apprehension Dr Weisman possesses concerning the use of nirvanol, as this drug has been my method of choice in these cases. Dr Weisman raises the objection to nirvanol that there have been two deaths from this drug. However, it is not at all clear that these two cases were affected by the administration of nirvanol itself. He also states that this drug has variability in its potency. It is true that it acts differently on different children, but this may not be inherent to the drug. Nirvanol possesses the advantage

which often is a distinct one of keeping these youngsters at home when sending them to the hospital is impossible or inadvisable. I think our experience in Rochester would be that the length of duration of symptoms after the treatment of nirvanol is approximately the same as the treatment with typhoid vaccine. It certainly is a much simpler method.

I think Dr Weisman's results are better than we have had in Rochester, although we have not had as many cases, and our methods varied slightly. The value of this treatment can only be determined, however, by just such analyses as Dr Weisman has presented.

SCOTCHING A CRUEL \$1,000,000 SWINDLE

Postal sleuths in Washington announce break-up of a nationwide "glimmer racket," through which some of the cruelest criminals on record have swindled the aged and the ailing of more than \$1,000,000.

Chief K. P. Aldrich, dean of Federal law enforcement officials, said his men had arrested seventeen of the public enemies, who have sold thousands of cheap glasses for \$100 or more a pair, who have performed fake eye operations in the living rooms of their victims, and who otherwise have preyed on the ills of elderly farmers and their wives.

"The swindlers specialize on those who are 70 or over," the postal inspectors said. "The ease with which they extort large sums of money from their victims is surpassed only by the brutality of their scheme."

The agents described the operation of the racket thus:

"Finger men" travel about the country selling eye glasses for all the traffic will bear. One ninety-eight-year-old man was induced to pay \$100 for glasses worth \$3.75. A few weeks later the same impostor sold him another "stronger" pair for \$135.

The "finger men" furnish the names of their victims to other members of the gang, known as "specialists," for a twenty per cent commission on profits yet to come.

The "specialists" usually pose as celebrated physicians and frequently bring their women "nurses" with them into the rural communities where the racket is worked exclusively.

The pseudo-physician examines the eyes of his credulous client, is aghast at the type of glasses sold previously by his confederate, and says that an operation is necessary immediately, if his victim is to live more than a few days.

The postal inspectors said this is the way the "operation" is performed.

"The fake doctor has his patient lean back. The head is dropped farther backward. An eye-dropper is inserted into a green opaque bottle, heavily corked, and a very few drops of the precious liquid, represented to be radium but actually some patent eye preparation, are withdrawn. After these drops are put into the eye, a blunt pair of medicated cotton-tipped medical tweezers are used to rub the medicine around in the eyes as an occasional drop is added."

Then, through some hokus pokus of the vaudeville magician, the "specialist" apparently withdraws from the eye a "malignant growth" which in reality is a piece of rubber brought along for that purpose. He immediately destroys it. Then he places a good pair of eyeglasses on his victim, whose sight immediately improves. This sort of operation, the agents said, frequently has cost an unwary citizen \$800 or \$900.

Usually after one of these "operations" on a victim who still has money left in the bank other impressive-looking members of the gang visit him about two weeks later and "lend" him a radium belt, which they guarantee to make him feel young again.

The belt is so valuable, they say, that they must have a deposit of \$1,500 to insure its safe return. One woman in Massachusetts even paid a \$2,000 deposit. She still has the belt, the criminals have her money, and she feels same as ever.

Of the seventeen men arrested—several in the last few days—two have been convicted, while the rest are being held for trial. Other members of the medical gang still are being sought.

4 The treatment compares favorably with the nirvanol treatment and other measures

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six per cent of the total calories whereas fat contributes from thirty-three to thirty-nine per cent of the total calories. The caloric contribution of protein is remarkably constant at approximately eleven per cent of the total calories used. This in a general way is in accord with the observation of Rubner, Voit, Lusk, Greenwald,⁹ and many others. Cathcart also reproduces a summary of Greenwald showing the percentage distribution of calories in the dietaries of fifteen widely scattered nations (Table I).

TABLE I.—PERCENTAGE DISTRIBUTION OF CALORIES

	No of studies	Protein	Fat	Carbo
Britain	25	12.5	25.5	62.0
Belgium	7	11.7	30.2	51.1
Denmark	6	12.3	27.8	59.9
Finland	8	16.4	29.1	54.5
France	1	15.5	12.9	71.6
Germany (less exper diets)	9	14.1	18.4	67.5
Greenland	1	44.0	48.0	8.0
India (native only)	4	9.6	21.8	68.6
Italy	11	14.8	13.1	72.1
Java (Malaya)	1	8.9	8.3	82.8
Japan	14	12.1	5.9	82.0
Russia (less Volga fishers)	13	15.8	16.1	68.1
Sweden	8	12.3	38.1	49.6
Switzerland	1	13.8	27.2	59.0
United States	27	12.3	34.2	53.5

It will be noted that with the exception of Greenland and Sweden all other nations derive less than thirty-five per cent of their calories from fat. Assuming that the basal caloric requirements of the "normal diet" described by Hill are as stated and that the man engaged in pursuits which involve an average further caloric expenditure, the increase over and above the basal requirements amounts to approximately one hundred per cent, i.e., 3100 or 3200 calories.

Wilder¹⁰ in a recent review makes the statement that the caloric requirements for his diabetic patients are calculated as being the basal requirements plus fifty per cent. This was not an uncommon standard used in calculating caloric requirements in the pre-insulin era. The total calories in the type of diet which Wilder prescribes for the adult male diabetic patient would therefore amount to approximately 2400 calories, conceding that the average man referred to above in the Royal Society Report has a basal requirement of 1600 calories. Again, if this diabetic patient were engaged in occupation similar to the variety of oc-

cupations studied by Cathcart, he would necessarily become an undernourished individual. Although the recent brilliant work of Houssay¹¹ demonstrating the inhibiting effect of the pituitary upon insulin effectiveness, the work of Long and Lukins,¹² which has further confirmed the importance of the influence of the adrenals on glycosuria, and the effect of thyroid on sugar metabolism are well-known, nevertheless, there is no disorder of any or all of these endocrine glands, as far as it has ever been demonstrated, which produces true diabetes mellitus. It is true that various disorders of one or all of these glands exert their influence upon the course of the disease. Most of these influences tend to offset the activity of insulin. Diabetes, as has been conclusively demonstrated, is primarily and essentially a disorder of metabolism due to insulin insufficiency. This insufficiency, of course, varies considerably with the degree of severity of the diabetes, and in the later stages in the juvenile types of this disease, insulin must be minimal if not entirely absent. If we assume that the normal individual secretes approximately one hundred units of insulin per day and that a given case of diabetes secretes only fifty units per day as a yearly average, then the difference between this deficiency and the normal will amount to fifty units. If this amount of insulin, properly distributed over the twenty-four hour period to prevent glycosuria, is administered parenterally, the total amount of insulin available to this diabetic will be one hundred units, which is equal to the pancreatic yield of the normal man. Is it therefore not reasonable to assume that this patient will be able to properly metabolize a normal diet? We have assumed that such is the case and that such a diet should be normal not only as regards its total caloric content but also as regards the proportion of grams carbohydrate to protein and fat. That this hypothesis has been proven correct is attested to by our own experience in treating diabetic patients during the past eleven years and has been amply confirmed by other investigators.

Objections to this type of therapeutic procedure have been many. First, that the desideratum of treatment is to feed an "adequate diet" and to control gly-

Symposium: Endocrine Glands

PROBLEM OF THERAPEUSIS IN DIABETES

H RAWLE GEYELIN, M D, *New York City*

In previous communications¹ we have demonstrated the benefits derived from feeding diets, normal in their caloric values and in the proportions of carbohydrate, protein, and fat to insulin treated cases of diabetes. In spite of the fact that the advantages of these diets as compared to other less normal diets employed in the treatment of diabetes have been confirmed by numerous observers both in this country and abroad, there remains a group of prominent clinicians who prescribe various modifications of the older pre-insulin types of diet. It is the purpose of this paper to present additional evidence of the advantages derived from the new as compared to the old pre-insulin types of treatment. The fundamental characteristics of most of the diets just alluded to as the "old diets" are (1) the preponderance of calories derived from fat, i.e., more than fifty per cent of the total and (2) the fact that the total calories fed are below those of the normal diet for a patient of given weight, age, sex, and occupation.

It is, I believe, generally accepted that in this country and Western Europe the diet of the average normal adult or child has a relationship in grams carbohydrate, protein, and fat of approximately 4-1-1 respectively. This proportion of essential food materials is agreed to by Rubner,² Voit,³ Joslin,⁴ Lusk, Cathcart,⁶ and many other observers. The first two mentioned authors find that normal adults eat a diet which is even higher in its ratio of carbohydrate to fat. While it is true that not all of the objectors to the so-called normal or high carbohydrate diet prescribe diets which are sub-normal in total calories, nevertheless the proportion of fat prescribed even in the normal caloric diets is of necessity proportionately higher than normal in order to bring the total calories up to the standard requirements of normal people (See Table IV).

Before proceeding to a further discus-

sion of the dietary therapeusis in diabetes, it is necessary to present the opinions of various authorities who have investigated the problem of what the normal man eats, not only as regards the proportion of carbohydrate, protein, and fat but also the total calories. Hill,⁷ referring to the food requirements of a normal individual, says

According to the Royal Society report, the "average man" should be defined as an adult man of sixty-six kilos (145½ pounds) performing eight hours average work in a climate such as that of France or England—should be between twenty-five and fifty years of age—171 centimeters in height (5' 7¼"). The basal requirements of such a man have been found by experiment to be 1687 calories. Harris and Benedict found that the average basal metabolism of normal men is measured by a daily heat production of about 1600 to 1650 calories.

Voit came to the conclusion from the study of a very limited number of subjects that diet yielding just over 3000 calories sufficed for the man performing work more strenuous than a tailor's but not so exhausting as a blacksmith's.

Atwater has put the value for an average man's diet somewhat higher, between 3300 and 3500 calories per day. Contributors to this work such as Rubner, Lusk, Murlin,⁸ and others put the caloric needs for the average worker as 3100 calories plus or minus 400 calories depending upon the sex, age, activity, and climate. Cathcart, in an admirable and detailed study of food intake of 154 families in St. Andrews, Scotland, finds that the average diet of all male groups studied other than the unemployed consumed from 3333 calories to 3020 calories. The mean value for the 154 families (745 individuals) was $411-84-119 = 3119$ calories. The absolute number of grams of carbohydrate fed varies from 407 to 421 grams per day while the fat varies from 107 to 140 grams per day. Carbohydrate therefore constitutes from fifty to fifty-

"customary diet" with approximately twenty to thirty per cent less calories derived from fat. Example Assuming that the patient is overweight on a diet which approximates 400-90-130, without reducing the amount of carbohydrate and protein, the fat is reduced by at least twenty to thirty per cent, and the dosage of insulin so regulated as to frequency, timing, and amount that any glycosuria resulting from such a diet is controlled.

Fourth, patients who are neither overweight or underweight on their "customary diets" before the discovery of diabetes are allowed to remain on these diets. The directions regarding insulin are the same as for Group 3.

Fifth, in the case of undernourished patients, particularly those in the juvenile group of diabetes, the normal or "customary diet" is increased calorically five to ten per cent.

In refutation of the statement that the administration of normal carbohydrate diets increase the demand for insulin, we cite the following case

CASE 1 F T, female. Her diabetes was first discovered August 1929 at the age of five. During the first few months, as will be noted in Table II, the diet was low in carbohydrate and total calories. The dose of insulin given (20 units) failed to control glycosuria entirely, and she was also having rather severe insulin reactions. The parents were not satisfied with her progress and rightfully so. She was taken to another physician where the diet was increased to 1684 calories. Both the carbohydrate and the fat of this diet were relatively low. When first seen in 1932, three years after the onset of diabetes, she was extremely thin, weak, fretful, hungry, and stealing food. She was at that time still showing considerable amount of sugar in her urine, often as high as six per cent, interspersed with this high degree of glycosuria were rather frequent and severe hypoglycemic reactions. The marked glycosuria had necessitated an increase of insulin from forty-two to eighty units per day. From December 1932 until April 1936 this child gained nearly thirty pounds in weight and eight inches in height. She is now of normal size (not over-size), is not hungry, and requires less insulin on a diet of 308-83-84 than she did when she was having a diet of 149-74-88. The average daily amount of glycosuria which obtained over a period of three months prior to her first visit was between thirty to fifty grams a day. During the first year of treatment this glycosuria persisted in slightly diminished

amounts. During the past two years or more the glycosuria rarely exceeds ten grams per day, and there are many days when the urine is sugar free. Because of the suddenness, the extreme severity and long duration of this child's insulin reaction, the parents cannot be persuaded to maintain the urine completely sugar free. It should also be noted in this patient that there were many areas of fat atrophy over

TABLE II

	At onset Aug. 1929	Previous to first visit	First visit 12-17-32	Last visit Apr. 1936
Diet (grams Coh.-P.-F.)	78-50-73	149-74-88	220-75-75	308-83-84
Calories	1189	1684	1855	2320
Insulin (units)	20	42 increased to 80	78	68
Height (inches)	44	48	48½	56½
Weight (pounds)	Loss of wt.	No gain in 3 years.	53½	62
Glycosuria	4 and 5 Plus	4 Plus	78% 243% 234%	4% 258% 188%
Blood Sugar				
Blood Cholesterol				

From May through August 1930 patient was having almost nightly convulsive seizures due to insulin reaction which were not recognized as such. Two that were particularly severe occurred in May and August.

Since December 1932, although the child has had a good many insulin reactions, there have been none during the past two years.

TABLE III

	At onset Aug. 1931	Previous to first visit	First visit 11-30-34	Last visit 5-28-36
Diet (grams Coh.-P.-F.)	100-90-180	230-120-110	Changed to 400-100-60	450-120-100
Calories	2350	2470	2720	3180
Insulin (units)	60 to 80	70 to 120	80	70
Height (inches) †	†	†	64½	65
Weight (pounds)	89*	124	129	141½
Glycosuria	0 to 4 plus "high"	0 to 4 plus "sometimes high"	0 to 1 plus	0 to 1 plus
Blood Sugar	"high"	"high"	138% 158%	98% 168%
Blood Cholesterol	not done	not done		

* Best normal weight prior to onset ninety-five pounds.

TABLE IV

	At onset Apr. 1933	Previous to first visit	First visit 4-5-1933	Last visit 1-20-35
Diet (grams Coh.-P.-F.)	100-50-50	150-120-180	350-120-90	400-90-90
Calories	1050	2700	2990	2770
Insulin (units)	0 to 40	60	42*	46
Height (inches)	71	71	71	71
Weight (pounds)	135	143	145	146
Glycosuria	0 to 4 plus "high"	0	0	0
Blood Sugar	"high"	"normal"	125% 363%	133% 179%
Blood Cholesterol	not done	not done		

* Average for first year

the thighs and buttocks when she was first seen. These have recently completely disappeared. The features to be emphasized in this patient are (1) Potential dwarfism due to undernutrition has been overcome, (2) No more insulin is required to maintain the same level of freedom of sugar in the urine than was required on the lower carbohydrate and lowered caloric diet.

CASE 2 S R, male. His diabetes was first discovered August 1931 at the age of

cosuria with the least possible amount of insulin. This, it is said, can not be done when high carbohydrate is fed because it increases the amount of insulin required.¹⁸ These critics of the normal diet make the assertion that only a comparatively small number of diabetics can be successfully treated with the higher carbohydrate diets without involving a great increase in the amount of insulin administered. This has not been our experience. The large majority of diabetics on a normal diet require no more, little more or even less insulin than does the same patient on a high fat diet equal in calories. Those who have employed the normal diet in the treatment of their insulin cases confirm this statement. As far as I know, none of the clinicians who object to the use of the normal diet have ever employed it over long periods in the treatment of any considerable group of cases.

A second objection has been that a diabetic patient who is allowed a large amount of carbohydrates loses his power of self-discipline with regard to food, with the inference that those treated with lower carbohydrate diets achieve and maintain self-discipline. How fallacious this inference is, is attested to by the fact that the last fourteen patients who have come under my care after having several years of treatment with low carbohydrate high fat diets (that is to say, these were the diets prescribed) have been overeating their diets consistently and have made very little pretense of adhering to the diet prescribed except at the time they pay semi-annual or annual visits to their physicians.

A third objection has been that the patients treated with normal diet show a greater amount of glycosuria than do cases treated with lower carbohydrate diets. While it is true that approximately ten to fifteen per cent of the cases which are under my supervision show a moderate but fairly persistent glycosuria—usually not more than five to ten grams daily—it has been my observation that an equal number of diabetic patients show glycosuria in equal amounts under any system of treatment, particularly a system that compels the breaking of diet.

The purpose of the present communication is to present further evidence and

amplify some of the past material presented in confirmation of the statement that diabetes under insulin treatment is more adequately controlled by the administration of normal diets than with diets either below normal in calories or abnormal in their proportion of carbohydrate, protein, and fat. There is ample evidence, both experimental and clinical, that excessive fat tends to lower the tolerance for glucose⁴ and for this reason we have lowered the fat intake in some cases below the level which might be considered normal for most people. Wilder,¹¹ in reviewing the most recent edition of Joslin's book, "The Treatment of Diabetic Mellitus," quotes Dr. Joslin on the subject of diabetic dwarfism as follows: "This condition today is probably inexcusable." In our opinion this statement should be revised to read: since the discovery of insulin this condition has always been inexcusable. It is difficult to understand the point of view of the clinician who is satisfied with the treatment of diabetic children over a period of years with diets which are in many instances far below the carbohydrate and caloric requirements of normal children and whose growth and general development are minimal or stationary over periods of years (See Table II). Many of such patients coming from other physicians have either been pathetic martyrs to hunger or else they have been stealing food. Unfortunately, most of them have not been stealing enough food and have therefore remained stunted or undernourished. As a matter of fact, the majority of insulin treated cases of diabetes, be they children or adults, unless they are allowed to eat normally, take the matter of diet into their own hands, particularly those who are suffering from under-nutrition.

The following technic for the management of all insulin treated cases of diabetes has been developed.

First, we determine whether the patient is overweight.

Second, we ascertain as nearly as possible what the customary pre-diabetic diet of that individual has been in terms of grams carbohydrate, protein, and fat. This is accomplished either at home or in the office with the help of a skilled dietitian.

Third, if the patient is found to be overweight, the diet prescribed is the previous

was considerable daily glycosuria. The need for insulin steadily increased until in March 1931, she was requiring an average of seventy-seven units per day. Since that time, and particularly since the time of the last report, (1934) the insulin requirements have diminished to fifty-two units a day with almost complete freedom from sugar. She attributes this to the lower amount of fat that she is eating (Table VI.)

CASE 6 T H, male, age at onset eleven years, seven months. This patient illustrates the prolonged effects of undernutrition. For four years the total caloric intake had not been raised above 1910 calories. His mother thinks, but is not sure, that a few months after the onset he received as high as 2500 calories. This is doubtful, at any rate, for the major portion of four years the diet was as indicated in Table VII and he gained only seven pounds in weight and less than an inch in height. His small stature is particularly noticeable when one notices the unusually large size of his feet and hands. Five brothers, one of whom has diabetes, are over six feet tall as is also the father. His mother is five feet, eleven inches. The patient, who was nearly sixteen years old when first seen, was less than five feet tall and weighed only 107 pounds. After increasing the diet and raising the carbohydrate, he has gained nearly three inches in height and nineteen pounds in weight in nine months. An interesting feature in this boy's case is that if he is given any insulin before supper, even if the dose is as low as two units, very severe convulsive hypoglycemic reactions occur in the early morning. At the present time he is receiving only twelve units in the morning before breakfast.

CASE 7 I H, male, age thirty-two. This patient after being under my care for several years for mild asthma came to me in April 1930, complaining of daily attacks of weakness, sweating, tremor, and a hollow, hungry feeling. He had discovered that these attacks were instantly relieved by sugar. They always occurred at 4 P.M. at least four or five times per week and had begun two months prior to his coming to consult me. The blood sugar determination made at 11 A.M. was eighty-two milligrams per 100 c.c. of blood. Another determination obtained at 4.30 P.M. on a day when he did not have an insulin reaction was as low as sixty milligrams per 100 c.c. of blood. These attacks continued for another two or three months and then disappeared. There was never any sugar found in the urine. The average weight of this patient had been 178 pounds over a period of five years, but at the time of the onset of what may have

been hypoglycemic symptoms, his weight was 191 pounds.

The patient was not seen again until February 23, 1932 at which time he came in complaining that for the past two months he had been suffering from fatigue, weakness, loss of weight, and nocturia. There was no other evidence of diabetes but his urine showed five per cent sugar. The blood sugar was 233 mg per 100 c.c. and the blood cholesterol was 242 mg per 100 c.c. He was put on a diet of 250-85-80 and desugarized with twenty-five units of insulin. His weight at this time was 178 pounds. From February until December, he lost nine pounds in weight and claimed he was hungry. The diet was then increased to 400-95-80 insulin, twenty-eight units. In July 1933, the diet was again raised, 400-100-95. He was sugar-free on twenty-two units of insulin, but his weight had dropped to 162 pounds. In August, the weight had dropped to 160 pounds and then later to 156 so that the diet was raised to 430 grams carbohydrate, 125 grams of protein, and 105 grams of fat. He was at that time engaged in vigorous outdoor exercise, chopping wood, etc., and found that it was possible to lower his insulin to seven units per day. On one occasion he took only four units and yet the urine was free from sugar. The patient stated that he was sure he could have kept sugar free entirely but he was too apprehensive of a reappearance of glycosuria. His parents at this time were not convinced that he had diabetes and during the fall of 1933, he consulted Dr. Joslin. At that time his weight was 160 pounds. He was put on a diet of 250 grams carbohydrate, 125 grams of protein and 135 grams of fat. He was easily desugarized but was discharged from Dr. Joslin's clinic on November 28, 1933 on an insulin dosage of twenty-two units. The urine contained considerable amounts of sugar, i.e., 3.4 per cent on the day of his discharge with a blood sugar of .36 per cent.

For the following year he adhered strictly to the diet prescribed by Dr. Joslin and finally on October 1, 1934, he returned to my care requiring fifty-two units of insulin to keep him sugar-free. He was showing one per cent sugar in his urine in a twenty-four-hour specimen. Diet was then changed to 325-90-90 and on December 5, 1935 he was sugar-free had gained eight pounds in weight, and required forty-two units of insulin.

Summary

The cases presented are only illustrative chosen because they represent the usual course of events when diabetic

fifteen Shortly after the onset of his diabetes this patient was treated by Dr Carl Van Norden for more than a year The diet, insulin requirements, etc., may be seen in Table III The boy's parents were not satisfied with his progress and finally transferred him to the care of Dr Porges in Vienna It will be observed that the diet prescribed at that time, although approximately normal in carbohydrate was rela-

TABLE V

	At onset Jan. 1930	Previous to first visit	First visit 6-4-32	Last visit Sept. 1935
Diet (grams Coh.-P-F) "Low Diet"	70-90-200	2440	325-90-80	325-90-80
Calories		2440	2380	2380
Insulin (units)	0	83	65	66
Height (inches)	Unknown	Unknown	67	68
Weight (pounds)	98	135	140	148
Glycosuria	4 PLUS	0	0	0
Blood Sugar	"High"	"High"	247%	118%
Blood Chol.	Not done	Not done	289%	194%

TABLE VI

	At onset Feb. 1927	Previous to first visit	First visit 4-3-30	Last visit 4-16-36
Diet (grams Coh.-P-F)	80-60-100*	80-60-110*	130-60-60	300-80-60
Calories	1460	1550	1300	2060
Insulin (units)	40	40 to 50	40	52
Height (inches)	60	62	62	62
Weight (lbs.)	100	105 (Sept 1929)	129**	124
Glycosuria	4 plus	4 plus	0 to 4 plus 0***	
Blood Sugar	"high and low"	"high and low"	042%	143%
Blood Chol.	not done	not done	231%	231%

* Diets not accurate. Takes extra food almost daily and having many hypoglycemic reactions.

** Slight detectable edema.

*** Rarely shows sugar at any time during last two years.

Striking himatism, tendency to obesity During first year of treatment she underate her diet to reduce weight and gained weight instead to 137 pounds. Since she has eaten higher carbohydrate and low fat, she has lost weight.

TABLE VII

	At onset July 1931	Previous to first visit	First visit 7-24-36	Last visit 3-28-36
Diet (grams Coh.-P-F)	150-80-110	150-80-110	350-100-80	400-100-100
Calories	2500 (7)	1910	2520	2900
Insulin	19	20	20	12
Height (inches)	Unknown	Unknown	59½	62
Weight (pounds)	Unknown	100	107	126
Glycosuria	4 Plus to 0	5%	0 to 4 Plus	0 to 4 Plus*
Blood Sugar			131%	058%
Blood Chol			206%	207%

* Four plus sugar is not present every day and when present is only in forenoon urine, i.e. between 9 and 11 A.M. All other readings are sugar free

tively high in fat. At first it was necessary to give as much as 120 units of insulin but within two months it was possible to reduce the daily dose to seventy units, and the patient was sugar free twenty-five days out of every month in all specimens voided. After his first visit to me, it was necessary to increase the insulin as indicated in the table, but this increase was not needed for more than two months, and then the dose

was again lowered to seventy units per day as indicated. The diet prescribed by Dr Porges had been in effect for only six months when he was first seen by me, and he still gave the appearance of a thin, rather undernourished youth In the past year and three months, he has gained twelve pounds and presents the picture of normal nutrition Again, this patient illustrates the fact that no increase in insulin is necessary to maintain a sugar free urine when the diet was raised from 100 to 450 grams carbohydrate (Table III) There is also the added fact that a moderate degree of under-nutrition has been overcome

CASE 3 W I, male, age at onset twenty-one years, eight months The course of the diabetes as shown in Table IV is again illustrative of the decreased demand for insulin after transferring from a high-fat to a high-carbohydrate diet. This patient was included in a previous publication and is presented here merely to extend the period of observation He was last seen in February 1935 with the record as observed in the table He writes me that he is still sugar free ninety-five per cent of the time and is taking forty-six units of insulin This patient has always presented the appearance of leanness almost to the point of undernutrition It has been suggested to him that he can have more food, but he says that he doesn't want it except on days when he plays tennis Another interesting feature of this case is the reduction of the blood cholesterol that followed his transference to the high carbohydrate diet

CASE 4 H N, male, age fifteen years, nine months at onset. Another instance where the insulin has been lowered and kept that way for a period of nearly four years after feeding high carbohydrate low fat (Table V) As in the preceding case, we have felt that this boy was rather lean even at his most recent weight of 148 pounds He admits that very often he breaks his diet and overeats his carbohydrates by the margin of fifty grams or more, but that this does not produce glycosuria We have seen several such instances in which patients can remain sugar-free after considerable additions to their regular carbohydrate intake without an increase of insulin

CASE 5 J W, female, age at onset fourteen years At the time this patient was presented before, (1934) it was pointed out that her insulin demands were not increased after the diet was raised from 190 grams carbohydrate in 1933 to 300 grams in 1934 but since that time, two years ago, her need for insulin has diminished, although at her first visit in 1930 she was only taking forty units of insulin per day There

without reference to his diabetes—and to actually put such a diet into effect in his daily life. When such a procedure was first undertaken it was believed that two things particularly would have to be guarded against. *First*, that there would be a tendency of diabetic patients to demand a very abnormal diet for presumably, in some cases at least, an over-indulgence of food—either carbohydrate, or fat, or both—had been considered as a possible cause of the disease. *Secondly*, it was known that some diabetics had a preconceived idea of what a diabetic diet should consist of and the diet outlined was not the result of their desires but more the result of their ideas of what it should be.

Now, after these years of experience with diabetic patients approached from this point of view, we have found much to what ten years ago would have been our surprise,

that diabetic patients do not crave large amounts of sweet. It is actually difficult sometimes to persuade a diabetic patient to take more than 350 grams of carbohydrate, or more than 110 grams of protein, or more than 120 grams of fat. Occasionally a patient is met who, for a period at least, seems to crave protein, and most of them seem naturally to desire at least seventy-eighty grams of fat in the daily menu.

The evidence gathered, then, seems to point more and more to the fact that diabetic patients, as a group, tend to choose diets which we would call normal and with a ratio of carbohydrate to protein and fat of roughly 4-1-1, and as Dr Geyelin has pointed out. The patient is happier on this diet, his food desires are better satisfied, he has less tendency to shock—in other words, a more even course—and his insulin needs are rarely any higher

OVARIAN THERAPY IN GYNECOLOGY

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In the field of gynecology and obstetrics, the chemically pure hormones estrin and progesterone are available. The exact chemical formula of each is definitely known and the physiology in the human is as follows. Estrin causes definite rhythmic contractions of the uterus; is apparently antagonistic to the excretions of the anterior lobe of the pituitary gland so far as vasomotor symptoms are concerned, and is responsible for the structural changes in the endometrium and will cause bleeding if sufficient amount is given. In the normal menstrual cycle, estrin precedes progesterone and then is antagonistic to it.¹ Progesterone causes relaxation of uterine musculature,^{1,2} is antagonistic to estrin and the secretions of the posterior lobe of the pituitary gland,¹ and is responsible for the premenstrual changes in the endometrium.^{3,4}

These two hormones have been used in the treatment of certain gynecological diseases and symptoms with due regard for the known physiology. What is the value of estrin? Patients with primary amenorrhea can be made to bleed more or less cyclically, if sufficient estrin is administered in a given period of time, usually 250,000 international units in fifteen days. Bleeding with this form of

therapy is from a mid-interval type of endometrium. A second cycle of spontaneous bleeding has never been produced, therefore each subsequent cycle requires at least 250,000 international units of estrin.

Estrin can be used for the relief of menopausal symptoms, either natural or surgical. These may be entirely relieved, but when medication is stopped they return in their original frequency and severity. This hormone should be used much as morphine for the relief of pain, and when combined with the ordinary sedatives and known hygiene is a valuable adjunct in treatment. The amount used depends upon the patient. Experience has shown that 10,000 to 50,000 international units weekly are sufficient to cut down the severity of the symptoms. These observations have been confirmed on a group of castrated patients who were followed over a period of 12-18 months.⁴ During this time they bled more or less cyclically and were relieved of the hot flashes until just before bleeding started. As noted above, when medication was stopped the menopausal symptoms returned in their original frequency and severity. Therefore the etiology of this symptom complex is still unsolved.

patients are changed from the "old" types of diet to those which furnish a major portion of their total calories from carbohydrate. An added reason for selecting these cases is that they have been observed frequently and over rather long periods of time. Also, because their records as regards insulin dosage, food intake, and freedom from glycosuria are reliable.

Case 7 is interesting from three standpoints. *First*, the possibility that his relatively mild diabetes (hypoinsulinism) was preceded by what may have been a brief period of hyperinsulinism. *Second*, that after receiving high carbohydrate diet for a long period of time, his demand for insulin steadily decreased until he was able to remain sugar free on a dose as low as four units of insulin. Incidentally, this improvement in tolerance, in spite of the high carbohydrate diet, was also accompanied by a rapidly falling weight curve. *Third*, after this patient was put on a relatively high fat diet in November 1933, his tolerance steadily fell until in

1934 he was requiring greatly increased amounts of insulin without achieving a completely sugar free urine. His weight had not changed appreciably during that year. From 1934 until 1935, his weight increased by five pounds and his insulin dosage was lower concomitantly with the feeding of a higher carbohydrate lower fat diet.

The evidence presented extends and reaffirms the observations made by us and many other observers during the past ten years, viz., that the majority of diabetic patients, particularly the juvenile group, do better and feel better when normal diets adequately protected by insulin are given. As far as can be ascertained, there is no detrimental effect produced in the fundamental condition of their diabetes. With a few exceptions the insulin demand of diabetics treated with normal diet are little if any greater than the insulin demands of patients receiving the "older" type of diet. In many instances, less insulin is required.

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Discussion

DR. WILLIAM S. LADD, *New York City*.—It seems hardly necessary to emphasize the significance and importance of a series of carefully conducted, continued observations such as Dr. Geyelin has reported. After all, the main purpose of the physician is to restore the patient to useful citizenship. Any method of treatment which tends to eliminate or ameliorate disease, to enable the patient to be relatively happy and content with life, to transform him from a dependent to an independent member of society, to enable youth to pursue his education and his play, and to enable an adult to work and earn his living, is, after all, meeting the test which practical therapeutics should meet and upon which its efficiency should be judged. The record of the patients which Dr. Geyelin has present is impressive.

To those of you who are not familiar with procedures in the handling of diabetic diets, it should be noted that the actual diets taken

by the patients are often not quite as rigid as the charts sometimes seem to make them, and although we use certain calculations to arrive at a diet for a given case, it is with full realization that it is probably a trial diet rather than something that may be fixed or absolute. Although Dr. Geyelin has pointed out the limits of what is considered an average diet for a great many people in many parts of the world, after all, in the individual case, the total calories of any person's diet will depend upon his energy needs and must be modified accordingly.

In considering the proportions of carbohydrate, protein, and fat in a diet, there is still another way of approaching the matter which I have used with much interest for a period of ten years or more. When a new patient presents himself, if the situation is not one of emergency, besides making the usual theoretical calculations, the patient is requested to outline a diet of his choice—

known about the disease save that it has a characteristic endometrium and no corpus luteum as noted at laparotomy. A small group of cases have been treated over a period of two years under controlled conditions.⁹ The following case history is cited as an illustration.

A single seventeen year old patient presented herself with the clinical picture of this disease. The endometrium was of a typical swiss cheese variety. She had had one curettage some six months previous to admission. Another curettage was done and the patient given $\frac{1}{4}$ - $\frac{1}{2}$ Rb U of progesterone at weekly intervals. The menstrual cycle was fairly regular for eight months, and medication was stopped for control purposes. Within six months the patient again presented herself with the typical picture of hyperplasia. Another curettage was done and progesterone therapy reinstituted. For the past eighteen months her periods have been more or less regular.

Six cases have been followed with equally good results. However an equal number of failures are reported which places the disease in the experimental phase of treatment. The work of Simpson and Burch¹⁰ with guinea pigs demonstrated that subestral amounts of estrin give the picture of hyperplasia of the endometrium, thereby indicating perhaps an imbalance between various hormones rather than an excess of estrin.

Another group of cases are those of habitual abortion for which no obvious cause can be found. It will be necessary to have a large series of cases in order to accurately evaluate the use of the hormone, or in those patients apparently successfully treated, to give no therapy should they become pregnant again. There are many factors to consider in this difficulty, and the lack of corpus luteum hormone production is only one.

Six cases with histories of two to five abortions from two to three months have had their first full term pregnancy. These patients were given one Rb U of progesterone weekly from the first missed menstrual period to the fifth lunar month. The efficacy of smaller doses remains to be satisfactorily proven.

Conclusion

Estrin, which has been supplied by Schering Corporation as Progynon-B, helps in the treatment of menopausal symptoms, senile vaginitis, and may find a place in the treatment of both degenerative and infectious atrophic arthritis. Progesterone will relieve a certain group of cases of dysmenorrhea, and will eventually take its place in the treatment of hyperplasia of the endometrium. Also, it is of benefit in carrying a pregnancy to term.

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Discussion

DR. ROBERT T. FRANK, New York City.—As was to be expected of a paper emanating from such a research center as Rochester, N. Y., Dr. Elden's claims are most conservative.

His physiology is sound. I cannot vouch, from personal observation, that progesterone inhibits posterior lobe secretion although I have full proof that estrin inhibits the secretion of the anterior lobe or the pituitary. I am not convinced that the action of estrin and progesterone are antagonistic except if this interpretation is applied to the effect of the two substances on the motility of the uterus. It is true that an excess of estrin inhibits or influences the

progesterone test in the rabbit, using the glandular proliferation of the endometrium as the positive interpretation of the test.

I am not yet ready to discuss the effect of estrin on amenorrhea as so many different interpretations of the results are possible.

I fully agree on the effect produced by estrin in surgical castrates and on the neurovascular symptoms of the menopause. In the dosage which we have used, no bleeding follows.

Estrin has a limited application in the vaginitis of children and the senile. In my experience it relieves arthralgia in a certain number of cases.

Dr. Elden's results in dysmenorrhea with

Other gynecological diseases for which this hormone has been used are gonorrheal vulvovaginitis and senile vaginitis. The use of estrin for the treatment of gonorrheal vulvovaginitis in children is based on the facts that, *first*, the hormone induces cornification of the epithelium of the vagina of the rodent, *second*, the immature vaginal mucosa harbors the gonococcus in its crypts and, *third*, the disease is rarely seen in adults. Members of the Department of Pediatrics,⁵ have treated several cases with 250,000 international units of estrin over a period of eighteen days. The control cases received chemical irrigations. Cornification, as shown by smear, was produced by both means, and the gonococcus was demonstrated in those treated with estrin and not in those receiving chemical irrigations. Witherspoon⁶ has recently reported a series of cases with negative results.

Senile vaginitis, which is probably due to the lack of estrin, seems to respond well to its administration. The hormone is used in conjunction with the usually accepted form of therapy. Depending on the patient, from 10,000 to 50,000 international units weekly are necessary for relief of signs and symptoms. Treatment has proven quite satisfactory but administration must be continued from time to time since it is purely substitutional.

Outside the field of gynecology estrin is being used for the treatment of various types of arthritis. In the Department of Medicine,⁷ twenty such cases have been followed over a period of eight months with weekly doses of 10,000 to 50,000 international units. The results so far serve to emphasize the need for further investigation of estrin as an agent for the relief of symptoms, first in women with a sharp increase in joint symptoms in the premenstrual periods, and second in women of the menopausal group in whom the onset of joint pains come with the onset of menopause. It is of interest that none of the patients obtained relief with weekly doses of progesterone in the amounts used, although larger doses might prove efficacious.

Progesterone has been a distinct aid in the treatment of certain gynecological diseases such as dysmenorrhea, hyperplasia of the endometrium, and habitual abortion.

Knaus¹ has studied uterine activity during the menstrual cycle and has shown that the uterus is in a state of motility and contractility up to about the sixteenth day, due to the action of estrin. Following ovulation on the fourteenth to sixteenth day up to about twenty-four to thirty-six hours before the onset of bleeding the uterus is quiescent. Just before catamenia, uterine motility and contractility reappear. During menstruation and up to the time of ovulation the uterus reacts to pituitrin, and in the period following is refractory to pituitrin. Just before the onset of the menstrual period there is a normal hyperemia. Based on these observations it should be possible with progesterone to quiet the uterus and hence relieve dysmenorrhea. A series of forty cases were followed under controlled conditions.⁸ Patients were given intramuscular injections of 3/25-6/25 Rb U of progesterone in oil, three to five days before the expected menstrual period. If relief was obtained the patients were given injections of oil, other mucous substances or no medication. Those complaining of dysmenorrhea with this regime were included in the series of seventeen selected cases reported. Patients getting relief with sterilized oil were excluded. Of the seventeen selected cases, forty-seven per cent obtained total relief of pain, eleven per cent partial relief, and the remainder, no relief. Considering the entire group of forty patients only twenty-five per cent were relieved. It seems incredible that such small doses afforded relief. The action of progesterone may well fit into the Schroder theory, which states that the normal hyperemia causes a congestion of blood which in turn gives rise to pain. Progesterone in the small doses used may be sufficient to relax the uterus enough to allow adequate circulation with subsequent relief of pain. It may act antagonistically to the secretions of the posterior pituitary and hence keep the uterus in a state of quiescence. In selected cases it is of definite benefit, and no doubt will have to be given monthly. Experience has shown that it must be given three to five days before the period, in order to be effective, since the hormone given in oil is probably slowly absorbed.

Hyperplasia has always been and still is a bugbear of gynecology. Little is

that here the diagnosis of a basophilic tumor of the pituitary gland is relatively easy to make

While the diagnosis in cases of pituitary tumors consisting of adenomas constructed out of secreting cells is thus aided by the tell-tale evidences of the activities of their secretions, diagnosis of tumors in and around the pituitary body which interfere with its secretion or leave it unaffected, is much more difficult. This difficulty is multiplied for the neurological surgeon whose practical relations to the treatment of these tumors necessitates a much more accurate and detailed diagnosis than would suffice for the general physician or neurologist.

Of the numerous questions to be answered in the diagnosis of tumors in and around the pituitary gland exclusive of eosinophilic and basophilic adenomata, the following may be listed in logical sequence

- 1 Is there a *lesion* present, or are we dealing with an outlying example in the far-flung range of normality?
- 2 If a lesion is present, is it a *tumor* or some other disease process?
- 3 If a tumor is present, is it located within, outside of, or both within and without the sella turcica?
- 4 What is the pathological nature of the tumor?

The answers to each of these questions may be expanded into very long dissertations. We shall limit ourselves here, however, to such discussion only as will advance the solution of the problem of diagnosis

Individuals often are seen by the physician for perhaps some other cause than one connected with the pituitary gland but who have some noticeable degree of obesity, skeletal underdevelopment or malnutrition. This may be enough to lead the patient or some anxious relative, or perhaps the physician himself to wish to investigate the possible cause for that particular individual's departure from the average normal appearance. Such a person may require a much more exhaustive study than one with some more obvious disturbance. But if it is found that his general health is good, his body chemistry and metabolism, normal; if neurological examination and roentgenologic studies are all negative, then one must conclude

that this individual, who because of his appearance may belong in the outer limits of normal, still has a right to occupy a place within the bounds of normality. One may speculate as he wishes about the "endocrine balance" but the best treatment is, as a rule, no treatment at all outside of what can be accomplished by simple regulation of diet and personal hygiene

If, on the other hand, one of the above changes occurs in association with visual acuity and visual field disturbances, and changes in the appearance of the optic disks, or if these visual changes are present even without the neuro-hypophyseal signs, one must assume a local lesion to be present, and the search to be made must be directed to determine its nature

The commonest lesions in and about the pituitary region, in the order of their frequency are

Pituitary adenoma

Chromophobe

Chromophile (eosinophilic and basophilic)

"Mixed" type

Bucconeural pouch tumor

Suprasellar meningioma

Glioma of the optic chiasm

Chordoma

Angioma

Cholesteatoma

Tuberculoma

Gumma

Pituitary adenoma The chromophile adenomas, while perhaps the most interesting endocrinologically, are the easiest to diagnose and have already been discussed. The chromophobe adenomas occur about five times as frequently as the chromophile. They form masses which grow from within the substance of the anterior lobe of the pituitary body but are endocrinologically inert. As might be expected, the first symptoms they produce are due to compression of the functioning elements of the gland such as cessation of menstruation, and, in immature individuals, interruption of skeletal development. Soon, thereafter, the tumor mass grows to sufficient size to produce tension upon the sellar diaphragm, and headaches appear. It is only later on, after the neoplasm has burst through the confines of the sella that compression of the chiasm occurs which results in prim-

progesterone are not extremely convincing. He himself limits the convincing results to twenty-five percent of seventeen cases treated. His dosage of 3/25 to 6/25 of a rabbit unit is much smaller than the dosage we employ, which averages from one to five rabbit units. The few cases that we have treated were exceptionally bad, and had resisted every other form of therapy, the relief of pain, if sufficiently frequent injections are given, is striking. I have not used either of the hormones under discus-

sion in the treatment of hyperplasia. In my three cases of habitual abortions, none less than five abortions preceding, the results so far are encouraging but not conclusive, as so many variable and incalculable factors have to be considered.

DR. ELDEN—Perhaps I did not make myself clear as to the treated cases of dysmenorrhea. I actually obtained relief in forty-seven per cent of the seventeen selected cases.

DIAGNOSIS OF TUMORS IN AND AROUND THE PITUITARY GLAND

LEO M. DAVIDOFF, MD, *New York City*

The interest of the neurological surgeon in endocrinology is due primarily to the close proximity of the pituitary body to the brain. As a result of this relationship, tumors of this gland, by upward or lateral extension, may give rise to symptoms referable to the cerebrum, and thus come directly within the surgeon's field of specialized activity.

By a happy coincidence, the disease acromegaly was described by Marie in the year 1886 when Victor Horsely, through his gift as an experimental scientist, and his genius as a surgeon, had already laid the foundations for modern surgery of tumors of the brain and spinal cord. Later, Horsely himself, Aschner, and also Cushing, recognizing the relationship between the pituitary gland and acromegaly, began their experiments on animals to determine the nature of this relationship. At the same time, Horsely and Cushing were applying their rapidly improving neurosurgical technic to the tumor of the hypophysis occurring in this disease. Neither of these great masters of neurological surgery, however, limited their interest in the purely technical and mechanical side of the subject, and thus through a stimulus originating in neurological surgery, a number of most important contributions were made to endocrinology. To Dr. Cushing, although for some years now retired from active surgery, the ramification of influences exerted by the pituitary gland over the general physiology of the body has remained to this day a source of vital preoccupation. Indeed, one of his most recent contributions to science has been the establish-

ment of a syndrome resulting from a hyperactivity of the basophilic cells of the pituitary gland.

The work of these and other pioneers has led to a degree of certainty today with regard to a small percentage of tumors in and about the pituitary body which has lifted this group from its place among diagnostic problems. Any modern physician can make a diagnosis of acromegaly if a patient with the disease comes even within the periphery of his range of vision, and once the diagnosis is made, the panorama of this disfiguring ailment will float before his mind's eye. The problem before us in relation to acromegaly is limited, therefore, not to the diagnosis, but to the nature of the therapy to be applied. This, again, will depend upon the size and degree of hyperactivity of the eosinophilic adenoma of the pituitary body which is responsible for the symptoms. These, in turn, are determined by evidence resulting from studies in metabolism, x-rays of the skull, and ophthalmological examinations.

Experience with pituitary basophilism as contrasted with acromegaly, or "eosinophilism," to use a parallel term, is naturally much more limited, since the syndrome was described nearly fifty years later, and is, moreover, a much rarer condition. Furthermore, diagnostic pitfalls are present in the form of primary hyperadrenalism and perhaps certain primary gonadal and possible pineal disturbances. But given the classical picture as described by Cushing in 1932, and one may say with very little hesitation

are middle-aged or older, and who show no, or very few, signs of endocrine disturbance. X-rays of the skull, as a rule, show no changes in the sella turcica but may show a thickening of the bone of the tuberculum sellae and less often shadows of calcium salts deposited in the tumor itself.

When the signs are indefinite and encephalograms are made, the films usually show a perfectly normal ventricular system, but the cisterns appear definitely abnormal. The cisterna chiasmatis is frequently entirely obliterated. The cisterna lamina terminalis may be displaced dorsally and caudally, while the cisterna interpeduncularis may show a concave defect of its rostral margin due to the projection of the tumor mass into it.

Gliomas of the optic nerves may occur anywhere from the retina back to the optic tracts. The location which concerns us here is behind the globes, intracranially. These tumors are more common in childhood, but may affect mature adults. They usually begin with disturbances of visual acuity, and advance rapidly showing irregular defects in the visual fields, then blindness, first in one eye and then the other. The eyegrounds show primary optic atrophy. The functions of the pituitary gland are practically never disturbed. Signs of increased intracranial pressure may occur late in the disease.

Roentgenograms of the skull may show an undermining of the anterior clinoid processes giving the sella turcica a "J" shape. Whenever this lesion is suspected, roentgenograms of the optic foramina

should be obtained. These usually show an enlargement, erosion or deformity of the optic foramen on the side primarily affected.

While the classical case of glioma of the optic nerves or chiasm can be thus diagnosed without much difficulty, these cases are often also obscure and their diagnosis may be again aided by the use of encephalography. In the normal encephalogram, the optic nerves and chiasm are frequently seen as a band of increased density between the gas shadow of the cisterna chiasmatis rostrally and that of the cisterna interpeduncularis caudally. In the presence of a glioma of the optic nerves, the cisterna chiasmatis is usually obliterated and the shadow of the rostral border of the cisterna interpeduncularis shows a concave defect due to the projection backward of the tumor mass.

The other tumors in the region of the pituitary above enumerated are too rare to be diagnosed except by exclusion of the more common lesions and cannot be discussed here in detail.

Summary

Tumors in and around the pituitary gland, while presenting many symptoms in common, may be differentiated by their various manifestations depending upon their origin, character, size, position, and direction of growth. In spite of these characteristics, the diagnosis in any given case may be obscure, and under these circumstances encephalography may be brought in to clarify the situation.

NEUROLOGICAL INSTITUTE

Discussion

DR. E. H. CAMPBELL, *Albany*—At the present time the principal indications for surgical attack upon pituitary tumors are those of pressure upon or invasion of nearby structures. By far the most common lesion is the chromophobe adenoma and, as a general rule, the structure most often injured by its upward growth is the optic chiasm. However, as Dr. Davidoff has so well brought out, endocrine disturbances may long precede the first visual symptoms. For example, I recently removed such a chromophobe adenoma from a forty year old woman who had first noticed failing vision three or four years ago, but who without apparent reason, had had amenorrhea for the past seventeen years. For the

previous four or five years she had gained weight and it was found that her sugar tolerance was increased. It was presumed therefore, that these symptoms of endocrine disorder were attributable in some way to the presence of the adenoma, before it had reached sufficient size to impinge upon the optic chiasm.

Recently Costello is reported to have found small adenomas of various types in a surprisingly large percentage of hypophyses in several hundred routine autopsies. That such small adenomas may be responsible for most of the disorders of the endocrine glands is an inviting theory. However, it is necessary to preserve great caution in embracing such an idea too

ary optic atrophy, bitemporal hemianopia, and gradually diminishing visual acuity. At the same time, extension dorsally with compression of the hypothalamus may result in obesity and disturbances of water metabolism, with a resulting diabetes insipidus. At this stage, the gland has been almost completely thrown out of function. The patient takes on a "hypopituitary" appearance. In addition to obesity, he shows pallor, dry skin, fine sparse hair on the head, very little body hair, atrophy of the genitalia. The extremities are relatively small and the fingers tapering. He may be drowsy and mentally dull. The basal metabolism is usually below normal. Sugar tolerance is normal or increased. The temperature is subnormal, the blood pressure, low, the hemoglobin, diminished. Pressure symptoms on the chiasm have meanwhile advanced so that the patient may already be blind, or at least have markedly diminished visual acuity.

Experience has taught us, furthermore, that this tumor seldom occurs before puberty and is uncommon past middle life. Finally, roentgen examination of the skull shows enlargement of the sella turcica with atrophy of the clinoid processes and dorsum sellae and depression of the sellar floor. There are no accompanying signs of hyperpituitarism such as thickening of the skull, dilation of the paranasal sinuses or enlargement of the mandible as seen in acromegaly. The disturbances about the sella are also distinguishable from atrophy of this structure as a result of generalized increased intracranial pressure from tumor elsewhere in the brain, by the absence of pressure signs elsewhere in the skull.

The degree of extension of these tumors beyond the confines of the sella turcica may often be very difficult to judge on a clinical basis. In these cases, it is sometimes advisable to perform encephalography. The encephalograms seldom show enlargement or distortion of the ventricular system, but the basal cisterns, especially the cisterna interpeduncularis, may be seen to be displaced dorsally and the cisterna chiasmatis dorsally and usually also ventrally.

The *bucconeural pouch tumors* are congenital lesions which usually manifest their presence around the age of puberty, thus definitely appearing in an age group

that is younger than the one to which the pituitary adenomas belong. The symptoms are again of two kinds, those related to chiasmal pressure with resulting atrophy of the optic disks and bitemporal hemianopia, and those related to pressure upon the pituitary gland and the hypothalamic region of the brain. The latter usually take the form of skeletal retardation, sexual infantilism, adiposity, diminished basal metabolic rate, increased sugar tolerance, and disturbed water metabolism.

These tumors are most often partly or wholly cystic and rest above rather than within the sella turcica. This frequently results in a dorsal extension of the growth sufficient to obstruct the foramen of Monro with consequent hydrocephalus and clinical manifestations of increased intracranial pressure. In as high as seventy to eighty per cent of cases in addition to the characteristic clinical picture, the plain roentgenograms of the skull present a typical shadow above the sella turcica which is cast by calcium salts deposited in the cyst wall.

In spite of the numerous signs by which this disease may be recognized, an occasional case is encountered in which the diagnosis is in doubt. Here, again, pneumoencephalography may have to be carried out. Where increased intracranial pressure exists the gas is injected directly into the ventricles. The resulting roentgenograms show symmetrically dilated lateral ventricles but no gas beyond the interventricular foramina, or if it does enter the third ventricle this cavity appears displaced dorsally by the tumor mass. In the absence of increased intracranial pressure if the gas is injected by the lumbar route the chiasmal and interpeduncular cisterns are obliterated and even the cisterna pontis may be defective in its dorsal portion.

Suprasellar meningioma is a term applied by Dr. Cushing to tumors arising from the dura overlying the tuberculum sellae and extending dorsally and caudally to compromise the optic chiasm and nerves. Because of the latter, it also produces primary optic atrophy and bitemporal hemianopia and needs to be differentiated from the other tumors in this region. The suprasellar meningioma characteristically occurs in women who

CANCER OF THE ESOPHAGUS

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Since our first report which was based on a series of 509 cases of cancer of the esophagus, we have had an additional experience in the care of 157 patients afflicted with this disease. In this latter group, more modern principles of treatment by means of physical agents were employed and a study of this group of cases seems to invite analysis of our impressions.

35 per cent of all cancer deaths in New York City are caused by cancer of the esophagus and this means that 300 cases of cancer of the esophagus die yearly in New York City. Other cities, where statistics are available, report even higher percentages, figures up to ten per cent have been quoted from several European centers.

The etiology of this disease still remains obscure, but we have the definite impression that poor teeth, intraoral sepsis, thermal irritation, repeated trauma, congenital defects, diaphragmatic hernias, diverticula, and scars of old lye burns play a role as predisposing causes of cancer of the esophagus. We have had one young man, thirty years of age, who developed squamous carcinoma of the upper esophagus in an area of heavy scar tissue resulting from a severe lye burn accidentally contracted twenty-seven years previously. That poor teeth, intraoral sepsis, etc. exert an influence in the causation of intraoral cancer has been generally accepted, and it seems not without significance that in the present series of cases eleven patients had double cancer, and of these we wish to report that in eight cases the other primary cancer was located in the oral cavity and in each of these eight, one or more of the above predisposing factors was demonstrated. It does not seem unreasonable to consider that the same predisposing factors were responsible for the commencement of cancer in both locations.

The diagnosis in most cases is quite

readily established by a careful history, physical examination, and satisfactory radiograph of the esophagus after barium swallowing. I do not feel safe, however, in relying entirely on a roentgen examination. Cancer of the esophagus is simulated by a number of benign conditions and an early lesion of the upper esophagus may readily be missed even after examination of a good film. Forty-four patients have been admitted to the Memorial Hospital with a diagnosis of cancer of the esophagus in whom we have been able to demonstrate the presence of a benign condition causing symptoms and radiographic findings indicative of cancer. Esophagoscopy is therefore necessary in all uncomplicated cases, as is also fluoroscopy with the patient in two positions.

Biopsy specimens of esophageal growths removed during esophagoscopy are examined by Drs. Ewing or Stewart and we learn in reviewing this histological material that ninety per cent of our cases are diagnosed as squamous carcinoma and two-thirds of these are reported as grade 2 and of these sixty-six per cent are found to be radioresistant. In the series of cases under discussion, there were also thirteen adenocarcinomas, one transitional cell carcinoma, and one spindle cell carcinoma. Only sixteen of the squamous carcinomas fell into the grade 3 group.

Cancer of the esophagus very often remains to the end a localized disease and death results from perforation of the growth into a vital structure. At autopsy quite often no signs of secondary deposits are to be found. In our first series of cases there were twenty-seven autopsies and metastases were absent in thirteen cases (forty-eight per cent). In the present series of 157 cases there were twelve autopsies and secondary deposits were noted in six cases (fifty per cent). Metastases were demonstrated clinically in eighteen patients and two of these patients had bone metastases; one of these went on to a pathological

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New York City, April 28, 1936*

quickly. It is well to bear in mind in connection with the pituitary adenomas that, as in the case of similar lesions in the thyroid, they may not at all times be hyperactive. The pituitary hormones themselves are not known chemically and there is even considerable uncertainty about the existence of some of the many postulated substances. Until our knowledge of the physiology of the pituitary gland has advanced consider-

ably further, the majority of the surgical attacks upon the gland must be directed towards the relief of the symptoms of local pressure. The symptoms of endocrine disorder are of considerable help diagnostically. However, it is not always possible to predict what effect surgery or the various available extracts will have upon the deranged functions of the ductless glands.

COD LIVER OIL AS A WOUND DRESSING

Cod liver oil within the past several years has become popular in medical circles as a healing agent for wounds, burns and similar traumatic conditions. Medical scientists from many parts of the world have conducted extensive studies on the subject and have announced excellent results, says an article in the *Druggists Circular* by Raphael M. Nacca.

More than two years ago Dr W. Lohr, a German physician, found that the use of cod liver oil was very effective in cleansing infection from burn wounds. The doctor said that not only was the infection controlled, but the growth of epithelium was stimulated, especially in the case of burns covering large areas of the body, such as burns of the back.

In describing the action of cod liver oil in the healing of wounds and burns, the doctor says that it permeates through the tissues, bringing about the liquefaction and removal of dead tissue and stimulating the growth of new tissue.

Dr H. Lucke, another German medical scientist, also experimented with the cod liver oil salve. He found it very efficacious in treating carbuncles, boils, abscesses and infected wounds, he also healed a patient suffering from an old fistula and another with a trophic ulcer through its use. This doctor recommended that the salve-covered dressings be changed every two days, especially in the cases of suppurative wounds.

The popularity of cod liver oil as a healing agent soon spread to other countries. Dr J. P. Steele, of England, used it with success in treating burns, ulcers and wounds, however, his method of application differs somewhat from that of the German doctors. Lint thoroughly soaked in cod liver oil is applied to the burned area and then covered with a bandage, this dressing is soaked again with oil the following day, and the lint is removed after a period of two days. Dr Steele says that the cod liver oil not only gave relief immediately upon application but also brought about a rapid healing with the growth of healthy new

tissue in cases which had not responded to the usual methods of treatment. This English medical scientist also used cod liver oil, by the above method, in successfully treating fistula, ulcers and deep skin abrasions, however, he first removed any pus or gangrenous tissue which was present in these conditions before applying the cod liver oil dressing.

Russian medical scientists were the next to study the healing action of cod liver oil. Drs V. K. Tumansky and I. A. Yatskevich devoted much of their attention to the bactericidal properties of the oil, after demonstrating through laboratory experiments the bactericidal power of cod liver oil. Drs Tumansky and Yatskevich applied their knowledge clinically and healed the infected wounds of fifty-three patients by means of cod liver oil dressings.

Other Russian physicians painted the clinical picture in even more detail. Dr V. I. Iost and Dr I. G. Kochergin treated more than two hundred and fifty patients with cod liver oil. Among these cases were one hundred and fifty fresh superficial skin wounds, forty suppurating wounds, twenty-eight chronic ulcers, twenty-five burns and frostbites, nineteen severe wounds of the body extremities, and ten open stumps.

The results of the clinical studies of these doctors showed that the cod liver oil treatment was of value in healing all of these various conditions. The healing action of the cod liver oil is due, the Russian physicians believe, as did the German physician, Dr Lohr, to the vitamins A and D in the oil, the vitamin D being the agent which stimulates the growth of new tissue.

Cod liver oil in the form of a salve or paste was considered the best method of application by the Russian medical scientists, for they say a paste keeps the oil in close contact with all parts of the injured area. The paste which they used in the clinical investigations consisted of equal parts of cod liver oil and sterile petrolatum with the addition of about five percent of Japan wax and nearly one percent of a vitamin preparation to give additional vitamin strength.

only to preserve that portion of skin from possible damage due to cross-firing

The patient receives his treatment daily in rotation to these four ports. The average daily exposure is 300 r and the total for each port ranges from 2,100 r to 3,300 r depending on the patient's tolerance and the skin reaction. Other factors are 200 K V, 30 Ma, 70 cm T-S distance, $\frac{1}{2}$ mm cu filtration, and treatment time of eleven minutes. The data on the cases treated by the 700 K V machine is incomplete due to mechanical difficulties with this particular machine which caused many interruptions and numerous cancellations during the outlined course of treatment.

In the second group of cases, treatment was entirely by gastrostomy and intra-esophageal irradiation with a special thirty mg radium element tandem. This applicator, with a total of filtration equivalent to only two mm of brass, was found to have a most beneficial effect in lessening tumor infection, healing ulceration, and widening the lumen of the esophagus at the tumor site, but had apparently little effect on the main tumor mass. Higher filtration up to two mm of platinum has been recommended by J. Gusez of France who reports good results with his applicator so filtered. Our tandem was inserted under esophagoscopic control and fixed in place for a period of twenty-four hours giving 720 mg hours. It was then removed and again inserted the following day for another 720 mg hours. A total dose of 4,320 mg hours was the objective.

In the third group were cases which came to us with complete esophageal obstruction and gastrostomy was done to prevent death by starvation. This was followed by enough general improvement in the patient's condition to warrant giving a course of external radiation. Due to the combination of gastrostomy and x-ray treatment the lumen of the esophagus again became patent and the radium element tandem could be inserted without undue trauma. Each patient in this group was a poor risk on admission.

In the fourth group, we have a small number of cancers which occurred in that portion of the esophagus from the piriform sinuses down to the level of the arch of the aorta. These cases theoretically are operable, but, in four such cases exposed through a cervical incision in the past year, all were found to be inoperable. In two cases widespread infiltration and fixation were

present, and, in the other two, extensive cervical metastases were present. After surgical exposure three of these cases had gold-filtered radon seeds inserted into and around about the tumor. This group offers our greatest opportunity to treat the cancer with an adequate, concentrated, and localized dose of interstitial radium. The gold seeds can be placed into the tumor itself without going through an infected ulcerated surface as is necessary if the seeds were to be inserted through the esophagoscope. As in the treatment of metastatic neck nodes, we find that visualization of the tumor mass by surgical exposure allows us to accurately determine its size and estimate the dose of radon necessary to sterilize that mass of grade 2 squamous cancer.

The thoracic portion of the esophagus is surrounded by vital structures and a large quantity of blood passing through the aorta, the heart, and lungs is necessarily exposed to the effect of the x-rays during the treatment period. We were at first a little apprehensive as to what possible untoward constitutional effects we might produce in this way by our treatment. We have had blood counts taken before and after heavy external radiation to the chest and found practically no change in the red blood count and only a slight drop in the white blood count. Lung fibrosis following treatment was not noted in any of our cases.

Summary

Treatment of esophageal cancer by divided doses of x-ray is usually followed by symptomatic and radiographic evidence of improvement and occasionally apparent complete regression of tumor occurs. Of sixty-eight cases so treated, thirty-three are alive, eight for one year or more and two for two years. In the previous series of cases the average length of life for all cases was 4.8 months.

If a radium tandem is to be used, heavy filtration of the capsules is recommended.

Surgical exposure of esophageal cancer and implantation of gold-filtered radon seeds into the tumor and tumor bed is suggested as a method of treatment offering several logical advantages.

1088 PARK AVE.

Discussion

DR. DAVID E. EHRLICH, *New York City*
—Dr. Watson has given us the latest from Memorial Hospital. I will add some data

from the New York City Cancer Institute Department of Hospitals, where we receive the more advanced and terminal cases.

fracture of the right humerus, and the other perforated the outer table of the skull resulting in a soft part tumor which was aspirated and metastatic squamous carcinoma demonstrated. Autopsy confirmed the clinical findings. We believe the unusual and more frequent metastases noted in this second series may be due to closer observation of our patients or to the fact that our patients are living long enough to develop demonstrable metastases. Two cases treated heavily by the protracted method of x-radiation died as a result of perforation of the esophagus followed by suppurative mediastinitis. At autopsy, in these two cases, no residual cancer was found and metastases were absent. These early cases demonstrated to us the ability of heavy external radiation to completely destroy esophageal cancer. It remains for us to find a way to accomplish this without causing esophageal perforation.

Gastrostomy is necessary when one proposes to use a removable intraesophageal radium tandem, and many advanced and emaciated patients must be given the advantage of a physical building up by gastrostomy feedings so as to withstand a protracted course of external irradiation. Due to lack of bed space, we have been unable to admit a number of our patients for gastrostomy and have been forced to treat them by external irradiation, and we have been gratified to note that eight of these patients have survived a year or more without gastrostomy. One patient managed nicely for two years after treatment but then had a recurrence, lost weight, and a gastrostomy had to be done. Since then he has gained 26 pounds in weight (3 months). This patient followed his usual work for two years after treatment.

The aim of treatment, until a method of cure is devised, should be to see to it that each patient has as full a measure of comfortable life as it is possible for us to give him. With prolongation of life as our objective, we cannot recommend radical surgery because of the prohibitive mortality rate. We have employed irradiation in a series of consecutive cases as they came to us. No patient was refused treatment no matter how hopelessly advanced or critically ill he may have been. Some patients died before irradiation

could be given, some during the course of treatment, and others shortly after its completion. These patients died of their disease, and I have no way of knowing whether irradiation hastened their end or not. Such cases would not at the present time be selected for aggressive irradiation therapy.

Treatment has been carried out along four different lines and this permits us to divide the series into four groups for purpose of discussion. The first and most important group includes those cases treated by the protracted or fractionated dosage method using either the 200 or 700 K V machines. The second group was treated by gastrostomy and a special radium element tandem for intraesophageal irradiation. The third group consisted of cases treated first by gastrostomy and then by heavy external radiation followed by divided doses with the radium element tandem. The fourth group is composed of a small number of cases of cancer of the upper esophagus treated by surgical exposure of the lesion and insertion of gold-filtered radon seeds directly into and about the growth.

In the first group, those cases treated by x-radiation, proper outlining of the treatment portals is of the greatest importance. In order to accurately cross-fire the beam of x-ray in the thoracic cavity at the level of the cancer, one must first map out the portals on the skin of the chest anteriorly and posteriorly under fluoroscopic control with the patient in the position in which he is to receive his treatment. The upper and lower limits of the disease are marked with lead strips both anteriorly and posteriorly. The posterior ports will often be found several centimeters higher than those on the anterior chest wall. The angle at which the treatment beam is to be directed will depend on the size of the patient's chest and the level of the lesion, but a practical estimation of this angle may be obtained while fluoroscopically marking out the treatment ports. With improved fluoroscopy and better roentgenographs we are often surprised to note how large the soft part tumors are which surround the areas of obstruction and ulceration noted in the lumen of the esophagus on fluoroscopy and esophagoscopy. For this reason, we seldom use skin portals smaller than fourteen by seven cm. Four of these portals are used—two anterior and two posterior—leaving a free zone four cm wide in the midline anteriorly and posteri-

only to preserve that portion of skin from possible damage due to cross-firing

The patient receives his treatment daily in rotation to these four ports. The average daily exposure is 300 r and the total for each port ranges from 2,100 r to 3,300 r depending on the patient's tolerance and the skin reaction. Other factors are 200 K V, 30 Ma, 70 cm T-S distance, $\frac{1}{2}$ mm cu filtration, and treatment time of eleven minutes. The data on the cases treated by the 700 K. V machine is incomplete due to mechanical difficulties with this particular machine which caused many interruptions and numerous cancellations during the outlined course of treatment.

In the second group of cases, treatment was entirely by gastrostomy and intra-esophageal irradiation with a special thirty mg radium element tandem. This applicator, with a total of filtration equivalent to only two mm of brass, was found to have a most beneficial effect in lessening tumor infection, healing ulceration, and widening the lumen of the esophagus at the tumor site, but had apparently little effect on the main tumor mass. Higher filtration up to two mm of platinum has been recommended by J Guisez of France who reports good results with his applicator so filtered. Our tandem was inserted under esophagoscopic control and fixed in place for a period of twenty-four hours giving 720 mg hours. It was then removed and again inserted the following day for another 720 mg hours. A total dose of 4,320 mg hours was the objective.

In the third group were cases which came to us with complete esophageal obstruction and gastrostomy was done to prevent death by starvation. This was followed by enough general improvement in the patient's condition to warrant giving a course of external radiation. Due to the combination of gastrostomy and x-ray treatment the lumen of the esophagus again became patent and the radium element tandem could be inserted without undue trauma. Each patient in this group was a poor risk on admission.

In the fourth group, we have a small number of cancers which occurred in that portion of the esophagus from the piriform sinuses down to the level of the arch of the aorta. These cases theoretically are operable, but, in four such cases exposed through a cervical incision in the past year, all were found to be inoperable. In two cases widespread infiltration and fixation were

present, and, in the other two, extensive cervical metastases were present. After surgical exposure three of these cases had gold-filtered radon seeds inserted into and around about the tumor. This group offers our greatest opportunity to treat the cancer with an adequate, concentrated, and localized dose of interstitial radium. The gold seeds can be placed into the tumor itself without going through an infected ulcerated surface as is necessary if the seeds were to be inserted through the esophagoscope. As in the treatment of metastatic neck nodes, we find that visualization of the tumor mass by surgical exposure allows us to accurately determine its size and estimate the dose of radon necessary to sterilize that mass of grade 2 squamous cancer.

The thoracic portion of the esophagus is surrounded by vital structures and a large quantity of blood passing through the aorta, the heart, and lungs is necessarily exposed to the effect of the x-rays during the treatment period. We were at first a little apprehensive as to what possible untoward constitutional effects we might produce in this way by our treatment. We have had blood counts taken before and after heavy external radiation to the chest and found practically no change in the red blood count and only a slight drop in the white blood count. Lung fibrosis following treatment was not noted in any of our cases.

Summary

Treatment of esophageal cancer by divided doses of x-ray is usually followed by symptomatic and radiographic evidence of improvement and occasionally apparent complete regression of tumor occurs. Of sixty-eight cases so treated, thirty-three are alive, eight for one year or more and two for two years. In the previous series of cases the average length of life for all cases was 4.8 months.

If a radium tandem is to be used, heavy filtration of the capsules is recommended.

Surgical exposure of esophageal cancer and implantation of gold-filtered radon seeds into the tumor and tumor bed is suggested as a method of treatment offering several logical advantages.

1088 PARK AVE.

Discussion

Dr DAVID E. EHRLICH, *New York City*
—Dr Watson has given us the latest from
Memorial Hospital. I will add some data

from the New York City Cancer Institute Department of Hospitals, where we receive the more advanced and terminal cases

fracture of the right humerus, and the other perforated the outer table of the skull resulting in a soft part tumor which was aspirated and metastatic squamous carcinoma demonstrated. Autopsy confirmed the clinical findings. We believe the unusual and more frequent metastases noted in this second series may be due to closer observation of our patients or to the fact that our patients are living long enough to develop demonstrable metastases. Two cases treated heavily by the protracted method of x-radiation died as a result of perforation of the esophagus followed by suppurative mediastinitis. At autopsy, in these two cases, no residual cancer was found and metastases were absent. These early cases demonstrated to us the ability of heavy external radiation to completely destroy esophageal cancer. It remains for us to find a way to accomplish this without causing esophageal perforation.

Gastrostomy is necessary when one proposes to use a removable intraesophageal radium tandem, and many advanced and emaciated patients must be given the advantage of a physical building up by gastrostomy feedings so as to withstand a protracted course of external irradiation. Due to lack of bed space, we have been unable to admit a number of our patients for gastrostomy and have been forced to treat them by external irradiation, and we have been gratified to note that eight of these patients have survived a year or more without gastrostomy. One patient managed nicely for two years after treatment but then had a recurrence, lost weight, and a gastrostomy had to be done. Since then he has gained 26 pounds in weight (3 months). This patient followed his usual work for two years after treatment.

The aim of treatment, until a method of cure is devised, should be to see to it that each patient has as full a measure of comfortable life as it is possible for us to give him. With prolongation of life as our objective, we cannot recommend radical surgery because of the prohibitive mortality rate. We have employed irradiation in a series of consecutive cases as they came to us. No patient was refused treatment no matter how hopelessly advanced or critically ill he may have been. Some patients died before irradiation

could be given, some during the course of treatment, and others shortly after its completion. These patients died of their disease, and I have no way of knowing whether irradiation hastened their end or not. Such cases would not at the present time be selected for aggressive irradiation therapy.

Treatment has been carried out along four different lines and this permits us to divide the series into four groups for purpose of discussion. The first and most important group includes those cases treated by the protracted or fractionated dosage method using either the 200 or 700 K V machines. The second group was treated by gastrostomy and a special radium element tandem for intraesophageal irradiation. The third group consisted of cases treated first by gastrostomy and then by heavy external radiation followed by divided doses with the radium element tandem. The fourth group is composed of a small number of cases of cancer of the upper esophagus treated by surgical exposure of the lesion and insertion of gold-filtered radon seeds directly into and about the growth.

In the first group, those cases treated by x-radiation, proper outlining of the treatment portals is of the greatest importance. In order to accurately cross-fire the beam of x-ray in the thoracic cavity at the level of the cancer, one must first map out the portals on the skin of the chest anteriorly and posteriorly under fluoroscopic control with the patient in the position in which he is to receive his treatment. The upper and lower limits of the disease are marked with lead strips both anteriorly and posteriorly. The posterior ports will often be found several centimeters higher than those on the anterior chest wall. The angle at which the treatment beam is to be directed will depend on the size of the patient's chest and the level of the lesion, but a practical estimation of this angle may be obtained while fluoroscopically marking out the treatment ports. With improved fluoroscopy and better roentgenographs, we are often surprised to note how large the soft part tumors are which surround the areas of obstruction and ulceration noted in the lumen of the esophagus on fluoroscopy and esophagoscopy. For this reason, we seldom use skin portals smaller than fourteen by seven cm. Four of these portals are used—two anterior and two posterior—leaving a free zone four cm wide in the midline anteriorly and posteri-

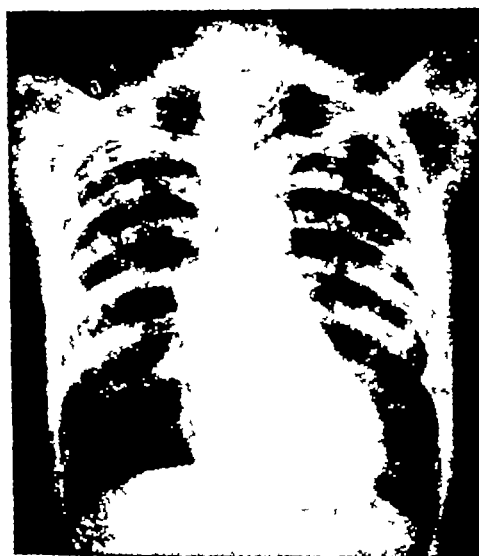


Fig 2

somewhat radio-lucent, suggesting the possibility of pneumo-pericardium"

On July 19, the patient died.

The autopsy examination (Fig 3) revealed an ulcerated lesion measuring about six cm in length at the middle third of the esophagus. In this region the posterior wall of the esophagus was made up only of necrotic tissue, and in the same area there were three fistulous openings (1) The first was two cm. in diameter, leading to the parenchyma of the mid-third of the left lung, giving rise to necrosis, (2) another was one cm. in diameter and leading to the right main bronchus, two cm. from the bifurcation and (3) another led through this portal, 1.5 cm. in diameter, just below the right branch of the pulmonary artery, and communicated directly with the pericardium. The pericardial sac was nearly obliterated. The visceral pericardium was markedly thickened by fibropurulent depositions. In the lower third of the esophagus, just beneath the mucosal coat, there was a whitish, elevated area, measuring about three by six cm in diameter, at



Fig 3

the cardiac end of the stomach another similar but larger lesion, elevated but not ulcerated, was situated. These were interpreted as metastatic depositions through the submucous lymphatics

Five days after death microscopic sections taken from the middle-third and the lower portion of the esophagus showed squamous cell epithelioma with infection.

Comment In this case the antemortem diagnosis of pneumopericardium was confirmed. In the literature only seven cases have been reported of pericarditis with carcinoma of esophagus and only one of pneumopericarditis reported by J W Begbie (*Monthly J M Sc London and Edinb*, 10 165, 1850). The paucity of the literature justifies this case report.

I wish to voice my thanks to Dr Watson for bringing before us the study of carcinoma of the esophagus which according to our New York City Cancer Institute statistics is twice as common as carcinoma of the lung, and fully as fatal

REMOVE THE LABEL

If you feel obligated to give to your patient a sample bottle of medicine do not be too tired to remove the label

The encouragement of self-medication which the doctor sponsors when he hands out samples of medicine, or directs the patients to procure certain publicized preparations, is a direct means of creating a customer demand for pharmaceutical manufacturers. In many instances the physician or dentist is the best avenue for these manu-

facturers to educate the public to the value of their preparations

The druggists frequently have customers who bring in a sample bottle of medicine and state that sometime ago Dr _____ gave this medicine to their neighbor, and they think that it might be helpful to them in their present illness, and if so, it would save them the expense of calling the doctor

—Kansas Medical Journal

Since 1923 we have had 250 cases diagnosed clinically cancer of the esophagus out of a total of 14,000 admissions (18%). In two cases the admission diagnosis from the other institutions was changed from cancer to syphilis of the esophagus and about two years follow-up on these two cases with the positive Wassermann sustained our impression of absence of malignancy. One case was discharged after a piece of nut shell was removed from the middle third of the esophagus.

The accompanying table was taken from a paper on "Treatment of Cancer Patients Study of End Results in 351 Autopsied Cases" by Dr Ira I. Kaplan, the Director of our Cancer Institute and published in the *NEW YORK STATE JOURNAL OF MEDICINE*, March 1, 1936. This table gives a five year summary of esophagus-autopsied cases at our Cancer Institute, being therefore a cross section of our series.

Before closing I wish to cite another case which came in subsequent to this tabulation. I am reporting in collaboration with Dr Paul T. Meyers, the following case of "Carcinoma of the Esophagus With Perforation into Lung and Pericardium and Consequent Pneumopericardium."

J. L., a forty-three year old colored male, was admitted to the Cancer Hospital on July 10, 1935. He had previously been in another hospital where he had been admitted on March 14, 1935, complaining of dysphagia for one and one-half weeks. He was unable to swallow solid foods unless finely chopped and washed down with water. There was no hematemesis.



Fig 1

Twenty pounds of weight had been lost in the preceding four weeks. Physical examination revealed an aortic diastolic murmur transmitted to the axilla. Wassermann and Kahn tests were negative. The chest x-ray was negative except for an atheromatous plaque in the aortic arch. Fluoroscopic and radiographic examination of the esophagus revealed a definite organic stenosis at its mid-third. An esophagoscopic biopsy showed no evidence of malignancy, leukoplakia being considered as a possibility.

The dysphagia increased, the patient was unable to swallow even fluids, and attempts to pass the smallest sized tubes were unsuccessful, on May 14, a tube gastrostomy (Janeway technic) was performed.

When the patient was admitted to the Cancer Institute, he stated that four days previously he had been attacked with a severe, "ripping" pain in the upper sternum, which moved later to the lower sternum. This persisted at the time of admission and was severe enough to confine him to bed. There were no chills, fever or excessive perspiration. Dyspnea was present in marked degree which was associated with considerable pain.

Because of his grave condition the patient was radiographed in bed with a portable x-ray machine. (Fig 1) The roentgenograms revealed no pulmonary consolidation, and the barium in the esophagus outlined an organic narrowing extending upward from the level of the ninth dorsal vertebra. At this point there was a distinct branching of the barium column into the right hilum. The Roentgen diagnosis was a carcinoma of the esophagus, with perforation into one of the right bronchi (Fig 2). A re-examination of the chest five days later (July 17) revealed an "irregular emphysematous pneumonitis in the lower lobes, superiorly. The right cardiac margin appears

TABLE

Color	White 16	Colored 4
Marital state	Married 13	Single 6, Not stated 1
Birthplace	U S A 7,	Foreign 13
Age	Oldest 72,	Youngest 44
Age average	44 to 50 3,	51 to 60 8, 61 to 72, 9
Sex	Male 18	Female 2 (Both colored)
Symptoms	Difficulty in swallowing 19, Loss of weight 20, Vomiting 1	
Clinical diagnosis	Positive 15,	Questionable 2, Error 3
X-ray diagnosis	Positive 18	Negative 2
Treatment at Cancer Hospital	Gastrostomy 7, Irradiation (x ray) 2	
Survey and irradiation	5,	Tracheotomy 1
Custodial care	5	
Duration of life—All cases	Less than 1 month 9,	
1 to 2 months	5	3 to 5 months 6
Duration of life of 5 untreated cases	Less than 1 month.	
Duration of life in 5 combined cases	1 month 2	3 months 2
5 months	1	
Cause of death	Inanition 5,	Peritonitis 2, Pneumonia 13
Autopsy findings	Positive 19	Negative 1 (Peptic ulcer)
Metastases	15 Extension to stomach 3, Mediastinum 4	
Perforation in trachea	3	Lung perforation 2

with the resultant formation of ammonium carbonate. This then combines with the magnesium salts and phosphates, forming magnesium phosphate and, as the urine is rendered alkaline in reaction, precipitation of the insoluble earthy phosphates also occurs.

While reports in the literature indicate that urea splitting infections do not occur frequently, aside from those belonging to the *Proteus* group, Brown and Earlam⁵ have demonstrated that eighteen per cent of the bacilli which infect the urinary tract have the power of splitting urea, and many staphylococcus act in a similar manner. Forty per cent of the strains of *Staphylococcus albus* which Brown and Earlam examined had the urea splitting property. Hellström⁶ also emphasized the importance of these organisms.

In my series of cases, infection which has been associated with the *Proteus* group has been extremely resistant to treatment and the acid-ash diet, the ketogenic diet, and the oral administration of acidifying agents have failed to eradicate the infection in the majority of patients. Thus, in instances where a coexisting *Proteus* infection is present, we have secured the best results by suturing a small catheter with triple O plain catgut into the pelvis of the kidney or by introducing a catheter through the renal cortex into the pelvis of the kidney through a small trocar. Following this, the kidney is lavaged at frequent intervals with a one per cent solution of phosphoric acid alternating with a one per cent solution of mercurochrome. This is done for a period of from ten days to two weeks.

In other types of infection, acidifying agents such as sodium acid phosphate, ammonium chloride, nitrohydrochloric acid, and urotropin frequently suffice to eliminate the infection. If an unfavorable response occurs following the use of such medication, the ketogenic diet is employed. This is gradually modified and the high vitamin A acid-ash diet is prescribed, and due to the fact that acetone, diacetic, and beta-oxybutyric acid are not present in the urine, there is little danger of acidosis when a patient is following the high vitamin A acid-ash diet. If possible, the renal infection should be eradicated before the patient is discharged from the hospital. In many instances, the use of the high vitamin A acid-ash diet is suffi-

cient to eliminate the infection as the pH of the urine is maintained between 5 and 5.2 for a considerable period of time.

Stasis. Urosthesis in certain instances seems definitely to be associated with the formation of calculi and frequently it is conducive to shifting the pH of the urine to the alkaline side. The observations of Hunner⁷ emphasize the importance of ureteral stricture as an etiological factor in the formation of recurrent calculi.

Stasis may be demonstrated by an intravenous urogram which is made prior to operation and following the removal of the calculus before the patient leaves the hospital. Such a study is of value also in localizing the lesion which is producing the obstruction in the ureter or at the ureteropelvic junction. I believe this procedure is an essential step in the pre-operative and postoperative routine.

If a stricture of the ureter is present, it must be corrected by ureteral dilations or other procedures.

Correction of Vitamin A deficiency

Vitamin A is prescribed for two reasons: (1) To overcome vitamin A deficiency if present and (2) because of its specific effect on the epithelial structures.

It is frequently very difficult to determine or elicit evidence of vitamin A deficiency by questioning the patient concerning his diet. Various discussions have arisen in the past regarding the incidence of vitamin A deficiency in this country, but evidence is being accumulated which indicates that mild degrees of deficiency occur more frequently than has heretofore been recognized. Although xerophthalmia and night blindness occur relatively infrequently, lesser degrees of deficiency, which cannot be detected by the usual clinical examination, may be present for long periods of time. This is indicated by the recent report of Jeans⁸ who used the photometer test for dark adaptation in determining vitamin A deficiency in children. He observed 100 children of the middle and low economic levels of a rural community and in twenty-six per cent he secured a positive test for vitamin A deficiency, of 102 children of all economic levels in a village, fifty-three per cent presented definite evidence of vitamin A deficiency. Of seventy children of the upper economic level in a city, fifty-six per cent had positive

FACTORS WHICH INFLUENCE THE FORMATION OF URINARY CALCULI

Clinical Application to the Prevention of Recurrent Renal Calculi

C C HIGGINS, M D, *Cleveland, O*

The recurrent formation of renal calculi following conservative operations for renal lithiasis occurs with sufficient frequency to warrant consideration of the basic factors involved in this complication. Although numerous publications dealing with the etiological factors associated with the formation of calculi, operative technic, and differential diagnosis may be found in the literature, a paucity of articles concerning the prevention of recurrent lithiasis is available.

Such procedures as cholecystectomy, appendectomy or resection of the rectum for carcinoma are effective inasmuch as they remove the organ and the underlying pathology, but the surgical removal of a calculus from the kidney treats only an "effect" and in no conceivable way corrects the cause or alters the factors responsible for the formation of the stones. It is necessary, therefore, to consider the operative procedure *per se* as only one phase in the correct management of renal lithiasis.

Recurrent renal calculi may be classified in the following manner:

1 True recurrence, or the formation of a calculus after complete removal of the original stone.

2 False recurrence, or the persistence of stones or fragments of calculi which were overlooked at the time of operation.

Unless a roentgenogram is secured before the patient leaves the hospital, it is impossible to state with any degree of certainty whether a true or a false recurrence has occurred. It is likewise true that small fragments may not be discovered during the operation, and they may not be revealed even by roentgenographic examination. Since these fragments may act as nuclei for the further formation of calculi, every precaution should be taken to avoid overlooking them during the operative procedure. In doubtful cases, we have found it helpful to use the method described by Quinby,¹ who

recommends that a small film be placed behind the delivered kidney in order to make a roentgenographic study. Braasch and Carman² have described a technic for fluoroscopic examination which is a valuable aid. Lower³ has devised an instrument by means of which the calyces and pelvis of the kidney may be lavaged thoroughly with saline solution after which suction is applied, thereby removing small stones, fragments of calculi, and sand which otherwise would be retained.

Various etiological factors, such as infection, vitamin A deficiency, hyperparathyroidism, cystinuria, phosphaturia, and oxaluria may be instrumental in the recurrent formation of urinary calculi.

Infection may be divided into two groups: (1) focal infection and (2) infection confined to the genitourinary tract.

Focal Infection

In 1921, Rosenow and Meisser⁴ demonstrated a specificity of streptococci in the formation of urinary calculi. They inoculated the pulps of the teeth of six dogs with streptococci isolated from the urine of patients who had renal lithiasis and following this, calculi developed in the dogs and streptococci were again isolated from the urine. In view of these observations we believe that all foci of infection should be removed including infection of the teeth, tonsils, prostate, cervix, and the bowel.

Infection confined to the Genito-Urinary tract

Infection of the kidneys. The nature of infection in the presence of recurrent renal calculi varies considerably, and it is essential to determine whether such infection is caused by (1) urea splitting organisms or (2) by non-urea splitting organisms. In the presence of an urea splitting infection in the kidney, urea is split into ammonia and carbon dioxide.

with the resultant formation of ammonium carbonate. This then combines with the magnesium salts and phosphates, forming magnesium phosphate and, as the urine is rendered alkaline in reaction, precipitation of the insoluble earthy phosphates also occurs.

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tests Of seventy children of middle economic level in a city, sixty-three per cent showed evidence of vitamin A deficiency and of sixty-two children of a low economic level in the city, seventy-nine per cent had a positive test for vitamin A deficiency Of seventy-eight village and city children who were deficient in vitamin A and who continued to remain under observation, all but three developed normal adaptation to darkness after a period of vitamin A therapy

In our recent series of forty-three patients with renal lithiasis, positive evidence of vitamin A deficiency was shown by the Jean's Test in fifty-eight per cent in spite of the fact that many seemed to have well-balanced diets It is an interesting fact that in the past year and a half, practically the same percentage of vesical and renal calculi was produced experimentally by the use of a new diet deficient in vitamin A This diet was used by the S M A Corporation in their work with carotene-in-oil and it has been approved by the Council of Pharmacology and Chemistry of the American Medical Association After maintaining the rats on the deficiency diet from 250 to 275 days, vesical calculi developed in from eighty-six to ninety-two per cent and renal calculi in from thirty-four to forty-two per cent of the animals During this period, it was noted that stratification of the epithelium of the bladder, ureters, and kidney pelves and karatinization occurred and, in many instances, this was followed by desquamation of the epithelium and even ulceration When vitamin A was restored to the diet, the epithelium returned to normal

In a few clinical cases, I have removed a small piece of the kidney pelvis adjacent to the calculus at the time of operation Examination of this tissue has shown complete loss of epithelium which, in some instances, had resulted in an acute inflammatory lesion with ulceration Sometimes small accumulations of sand may be quite adherent at the site of the lesion and this may act as a nucleus for further enlargement of a calculus by deposition of salts which are precipitated in the urine Finally, this accumulation of sand may be expelled spontaneously down the ureter or drop into the dependent lower calyx of the kidney, which is the usual site for the formation of calculi Here this

nucleus gradually enlarges after further deposition of phosphates and carbonates Therefore, due to its specific effect on the epithelial structures and in order to correct vitamin A deficiency, it is a part of the dietary regimen

Hyperparathyroidism

The observations of Barney and Mintz,⁹ Chute,¹⁰ Albright and Bloomberg,¹¹ and others have focused our attention on the relation between hyperparathyroidism and renal lithiasis

In our series of 210 cases in which complete blood studies have been made, there has been one case of hyperparathyroidism This patient presented some of the most marked evidences of vitamin A deficiency we have seen She herself had noticed the presence of night blindness and a positive Jean's test was present The night blindness disappeared following the administration of carotene-in-oil, and the diagnosis of hyperparathyroidism was verified by the removal of an adenoma from the parathyroid gland

In all cases of renal lithiasis, an examination of the blood should be made to determine whether a high level of serum calcium and a low level of serum phosphorous are present, such as are seen in hyperparathyroidism If the serum calcium level is elevated and the serum phosphorous level lowered, it is advisable to make roentgenographic studies and to study the elimination of calcium and phosphorous in the urine.

Cystinuria

This metabolic disease occurs rather infrequently Seegar and Kearns¹² collected a series of 181 cases of cystinuria and found 124 instances of renal lithiasis Cystinuria is believed to be due to an error in metabolism and may be associated with a disturbance of the intermediate protein metabolism Heredity seems to be an important factor and several authors have reported the occurrence of cystine calculi in more than one member of a family

Phosphaturia

Temporary phosphaturia may be caused by various metabolic disturbances, or temporary alkalinity of the urine may be due to eating an excessive amount of cit-

rus fruits such as oranges or lemons or taking an excess of alkaline ash in the diet.

Permanent noninfected phosphaturia may be associated with alteration in function of the large bowel while permanent infected phosphaturia is due to the deposition of phosphates by urea splitting organisms, and this frequently is associated with the formation of recurrent calculi.

Oxaluria Neville¹³ has stated that oxaluria may occur in patients who are subsisting on a diet deficient in vitamin B. Thus vitamin, therefore, should be added to the diet. If an elevation in the blood uric acid is present, then the purins must be restricted.

Clinical application

In view of our experimental and clinical observations during the past four years, the following routine is used postoperatively in all cases of renal lithiasis.

- 1 Elimination of stasis
- 2 Eradication of infection
 - a. Focal
 - b. Infection of the genitourinary system
- 3 Correction of metabolic disturbances
- 4 Treatment of hyperparathyroidism if present.
- 5 Correction of vitamin A deficiency
- 6 Correction of vitamin B deficiency
- 7 Dietary regimen

In this discussion, only the postoperative dietary management will be considered.

Dietary regimen In our early cases, we believed a knowledge of the pH of the urine in the bladder would provide sufficient information to determine whether the high vitamin A acid- or alkaline-ash diet should be prescribed. However, occasional exceptions were observed, and it was found that it is important to determine the pH of the urine from each kidney. This is especially true when a urea splitting organism is found in the urine obtained from the kidney containing the stone, while a similar infection is not present in the other kidney. In seventeen patients in our series, it was found that a unilateral urea splitting infection was present which would account for the difference in the pH of the urine from the kidney harboring the calculus. However, in eleven cases, no infection was present in either kidney, but there was marked

impairment of renal function and stasis in the kidney containing the calculus. Herrold, in a recent Urological Club letter reported cases in which this had occurred and Randall¹⁴ has mentioned it also. Therefore, to ascertain correctly which diet should be prescribed, the pH of the urine from the kidney which contains the calculus must be known. Likewise, if calculi are removed surgically or passed spontaneously, they should be analyzed to determine the chemical constituents, thereby ascertaining whether the salts present are those which are precipitated in urine with an alkaline or an acid reaction. If the reaction of the urine from the kidney containing the calculus is alkaline or if the calculus is found to be composed of phosphates, carbonates or oxalates, the high vitamin A acid-ash diet should be prescribed. If the reaction of the urine, however, is acid, or if the stones are found to be composed of uric acid or of cystine, the high vitamin A alkaline-ash diet should be prescribed, the fundamental purpose of the diet being to adjust the pH of the urine to a point where the salts are held in complete solution so that precipitation cannot occur. By reducing the pH of the urine to 5 or 5.2, the phosphates and carbonates of calcium and magnesium which are the chemical constituents of most recurrent renal calculi, are held in complete solution and precipitation does not occur. Similarly, by the use of the alkaline-ash diet, cystine and uric acid salts are held in complete solution. Frequent examinations of the urine should be made to ascertain that the various salts are not being precipitated. If the pH of the urine is reduced too strongly to the acid side, precipitation of uric acid salts may occur. Each patient must be individualized and the pH of the urine must be adjusted to the point at which the salts essential for the formation of a calculus are not precipitated.

In the past three months, my laboratory assistant, Mr. Kovach, and I have made studies to determine the range of precipitation of the various urinary salts according to pH readings. We have attempted to determine the pH of the urine at which precipitation of phosphates, carbonates, oxalates, urates, and cystine first occurs. These results will appear in the literature shortly.

As stated previously, the majority of

recurrent calculi are composed of magnesium, calcium phosphates, and carbonates, consequently, as a general rule, the high vitamin A acid-ash diet is prescribed. The basic diet contains an excess of acid-ash of 17.3 and the constituents of the diet are varied daily until the pH of the urine is reduced to 5 or 5.2 and maintained at this point, thus the patient at the time of discharge, may have an excess of from twenty-five to thirty c.c. of acid-ash in the diet. In some instances, acidifying agents such as nitrohydrochloric acid, ammonium chloride or sodium acid phosphate are administered also to maintain the correct pH of the urine.

High vitamin Acid-ash diet

The purpose of this diet is to furnish an adequate high vitamin diet in which the total acid-ash exceeds the total basic-ash. To accomplish this, it is absolutely necessary that no salt be used for seasoning foods, either in cooking or at the table.

The following foods, in the amounts designated, must be included in the diet daily.

A ACID-ASH FOODS (Minimum amounts)

I CEREAL—Any one of the following measured servings (2 c.c. excess acid-ash)

Cornflakes	1 cup heaping
Cornmeal (cooked)	$\frac{2}{3}$ cup
Farina (cooked)	$\frac{2}{3}$ cup
Oatmeal (cooked)	$\frac{1}{2}$ cup
Puffed wheat	1 cup scant
Puffed rice	1 cup heaping
Rice (cooked)	$\frac{1}{2}$ cup scant
Shredded wheat	$\frac{1}{2}$ biscuit

II MEAT—Any two of the following measured servings (12 c.c. each)

Beef, loin, med fat	4" x 4 $\frac{1}{4}$ " x $\frac{1}{2}$ "
Chicken, broiled	one-half
Chicken, stewed	breast or thigh plus leg
Cheese, cheddar	3 $\frac{1}{2}$ " x 2" x 1"
Codfish, fresh, cooked	$\frac{1}{4}$ cup
Eggs	2
Frankfurters, large	2
Halibut	4" x 2" x 1"
Ham, fresh	4 $\frac{1}{2}$ " x 3" x $\frac{1}{4}$ "
Heart, beef	2 $\frac{1}{2}$ " x 3" x 1"
Kidney, veal	$\frac{3}{4}$ cup
Lamb chop	3 med. size
Lamb roast	5" x 5" x $\frac{1}{4}$ "
Liver, beef	3" x 6 $\frac{1}{2}$ " x $\frac{1}{2}$ "
Mackerel, fresh	2" x 4" x 1"
Oysters, very large	3
Pork chop, thick	1
Salmon, fresh	3" x 4" x $\frac{3}{4}$ "

Salmon, canned	$\frac{1}{2}$ cup packed
Trout	2 $\frac{1}{2}$ " x 3" x 1"
Turkey, 2 slices	2" x 3" x $\frac{1}{4}$ "
Veal chop	1
Veal roast	3" x 2 $\frac{1}{2}$ " x $\frac{1}{8}$ "
White fish	2 $\frac{1}{4}$ " x 3" x 1"

III BREAD—Whole wheat, 5 slices (22 c.c. each)

IV EGGS—Two (55 c.c. each)

V MISCELLANEOUS—Any one of the following measured servings (2 c.c.)

Macaroni	$\frac{3}{4}$ cup
Spaghetti	$\frac{1}{2}$ cup
Rice	$\frac{1}{2}$ cup
Corn	$\frac{1}{2}$ cup
Plum Cake	1 $\frac{3}{4}$ " x 1 $\frac{3}{4}$ " x 1 $\frac{1}{4}$ "

B ALKALINE-ASH FOODS (Maximum amounts)

I MILK—One pint (72 c.c.)

II CREAM— $\frac{1}{4}$ cup (103 c.c.)

III FRUITS and VEGETABLES—(See below) (Not to exceed 25 c.c.)

C CONCENTRATED VITAMIN FOODS

I YEAST—2 cakes

II COD LIVER OIL—2 tablespoonfuls, or Halver oil, 2 capsules before each meal

III WHEAT GERM—2 tablespoonfuls to be added to cereal

Fruits and vegetables shall be chosen from the following lists only. Any combination of fruits and vegetables may be selected, but the total excess basic-ash in the selected combination must not exceed twenty-five c.c. daily.

Fruit	Amount	cc of excess basic ash
Watermelon	2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x $\frac{1}{3}$ "	27
Grapes	$\frac{1}{2}$ cup or 24 grapes	27
Pear	1 medium	36
Apple	1 small	37
Grape juice	$\frac{1}{2}$ cup	39
Lemon juice	$\frac{1}{2}$ cup	41
Cherry juice	$\frac{1}{2}$ cup	44
Orange juice	$\frac{1}{2}$ cup	45
Raspberry juice	$\frac{1}{2}$ cup	49
Peach	1 medium	50
Lemon	1 medium	55
Banana	$\frac{3}{4}$ cup or $\frac{1}{2}$ large	56
Orange	1 medium	56
Cherries	2/3 cup	61
Apricots	2 medium	68
Pineapple	2/3 cup diced	68
Muskmelon	$\frac{1}{2}$ cup	75
Rhubarb	$\frac{1}{2}$ cup	86
Vegetable		
Asparagus	$\frac{1}{2}$ cup	08
Green peas	$\frac{3}{4}$ cup	13
Onions	$\frac{1}{2}$ cup	15

Pumpkin	½ cup cooked	15	Salt-free butter	2 squares
Turnips	½ cup cooked	2.7	Milk	½ pint
Squash	½ cup mashed	28	Cream	¼ cup
Radishes	10	29	Sugar	Sugar
Mushrooms	½ cup canned	40	Beverage	Coffee
Cauliflower	2/3 cup cooked	5.3		
String beans	2/3 cup cooked	54		
Tomatoes	½ cup	56		
Cabbage	2/3 cup cooked, 1½ raw	60		
Tomato juice	½ cup	6.2		
Sweet potato	½ medium size	6.7		
White potato	1 potato 2½" diameter	70		
Lettuce	¼ head or 16 leaves	74		
Celery	4 stalks or ¾ cup	78		
Cucumber	1/3 cup sliced	79		
Rutabagas	½ cup mashed	85		
Carrots	5/8 cup	10.8		
Beets	2/3 cup	109		

LUNCH

Meat	Veal chop
Rice or substitute (see miscellaneous)	Steamed rice
Vegetables or salad	Sliced tomatoes
Fruit	Baked apple
Bread, whole wheat	1½ slices
Salt-free butter	2 squares
Beverage	Milk, 1 glass

DINNER

Meat	Roast beef
Vegetable	Potato
Vegetable or salad	String beans
Dessert	Tapioca cream pudding
Bread, whole wheat	1½ slices
Salt-free butter	2 squares
Cream	Cream
Sugar	Sugar
Beverage	Coffee

Note One pint of milk is to be used each day in any form.

The basic high vitamin A *alkaline-ash* diet has an excess alkaline-ash of 17.3 which likewise is varied daily to the point at which uric acid or cystine precipitation does not occur

High vitamin Alkaline-ash Diet

The purpose of the high vitamin alkaline-ash diet is to furnish an adequate high vitamin diet in which the total alkaline-ash exceeds the total acid-ash

The following *foods* in the designated amounts should be included in the diet daily

A ALKALINE-ASH FOODS

I MILK—One quart

II CREAM—½ cup

III FRUITS and VEGETABLES—Any combination of fruits and vegetables may be selected from the following list, but the total excess basic ash must total at least thirty-eight cc daily

Fruits	Amount	cc of excess basic-ash
Watermelon	2½" x 2½" x 1"	27
Grapes	½ cup	27
Pears	1	36
Apples	1 small	37
Currents (dried)	¾ cup	37
Lemon juice	½ cup	41
Orange juice	½ cup	45
Peaches	1 medium	50
Dates	7	5.5
Bananas	½ large	5.6
Oranges	¾ cup or 1 medium	56

Note A few samples of permitted fruit and vegetable combinations are

Orange juice, ½ cup	4.5
Grapes, 24	27
Cauliflower, 2/3 cup	5.3
Tomato, ½ cup	56
Potato, 1 medium	70
Total	251

Apple, one	37
Pineapple, 2/3 cup	68
Peas, ¾ cup	1.3
Cabbage, ¾ cup raw	30
Potato, one	70
Total	218

Muskmelon, ½ cup	75
Apple sauce, 1 apple	37
Tomato, ½ cup	56
Asparagus, ½ cup	08
Lettuce, ¼ head	74
Total	250

In addition, the following acid and neutral foods may be used as desired

Acid foods Cranberries, flour (plain cookies), Pastry with custard or allowed amounts of fruit fillings, English walnuts, popcorn—(no salt), unsalted peanuts, unsalted crackers

Neutral foods Sweet butter, candy (no chocolate bars), lard, olive oil, salad oil, cornstarch, mayonnaise, sugar, tapioca, tea, coffee or Kaffee Hag, postum

The following list contains a few striking examples of foods which must be omitted because of their extremely high basic-ash content

Almonds, beet greens, dandelion greens, figs molasses, olive, parsnips, raisins, spinach, dried fruits and vegetables

Suggested Plan of Menu	Sample Menu
BREAKFAST	
Fruit	Grapes
Cereal and wheat germ	
Oatmeal and 2 tablespoonfuls wheat germ	Scrambled
Eggs, two	
Bread whole wheat	
Toast, whole wheat, 2 slices	

Cherries	2/3 cup	61
Apricots (fresh)	2	64
Pineapple	2 slices	68
Cantaloupe	1/3 melon or 1/2 cup	75
Rhubarb (cooked)	1/2 cup	86
Raisins (cooked)	1/2 cup	213
Fig chips (dried)	1/2 cup	80.7

Vegetable

Asparagus	12 - 5" stalks	08
Peas, (fresh)	3/4 cup	13
Onions	1/2 cup	15
Pumpkin	1/2 cup	15
Turnip	1/2 cup	27
Squash	1/2 cup	28
Radishes	10	29
Beans, canned		
kidney	1/2 cup	30
Potato chips	10 - 12 large	36
Mushrooms	1/2 cup	40
Cauliflower	2/3 cup	53
Peas (dried)	1/2 cup	54
Beans (snap)	2/3 cup	54
Tomato	1/2 cup or 1 med	56
Beans, canned		
baked	1/2 cup	60
Potato, sweet	1/2 medium	67
Potato, white	1 medium	70
Lettuce	1/4 head	74
Celery	4 stalks or 3/4 cup	78
Cucumber	1/3 cup	79
Rutabagas	1/2 cup	85
Carrots	5/8 cup	108
Parsnips	1/2 cup	119
Beans, lima, green	1/2 cup	140
Chard	1/2 cup	157
Beans, navy dried	3/4 cup	261
Spinach	1/2 cup	270
Beet greens	1/2 cup	270
Beans, lima, dried	2/3 cup	416

B ACID-ASH FOODS*I MEATS—Any two of the following measured servings*

Beef, loin, med. fat	4" x 4 1/4" x 1/2"
Chicken, broiler	one-half
Chicken, stewed	breast or thigh plus leg
Cheese, cheddar	3 1/2" x 2" x 1"
Codfish, fresh,	cooked 1/4 cup
Eggs	2
Frankfurters, large	2
Halibut	4" x 2" x 1"
Lamb roast	5" x 5" x 1/4"
Liver, beef	3" x 6 1/2" x 1/2"
Mackerel, fresh	2" x 4" x 1"
Oysters, very large	3
Pork chop, thick	1
Salmon, fresh	3" x 4" x 3/4"
Salmon, canned	1/2 cup packed
Trout	2 1/4" x 3" x 1"
Ham, fresh	4 1/2" x 3" x 1/4"
Heart, beef	2 1/2" x 3" x 1"
Kidney, veal	3/4 cup
Lamb chop	3 med size
Turkey, 2 slices	2" x 3" x 1/4"
Veal chop	1
Veal roast	3" x 2 1/4" x 1/8"
White fish	2 1/4" x 3" x 1"

II EGGS—one**III BREAD—Whole wheat—2 slices****IV CEREAL—Any one of the following measured servings**

Cornflakes	1 cup heaping
Cornmeal (cooked)	2/3 cup
Farina (cooked)	2/3 cup
Oatmeal (cooked)	1/2 cup
Puffed wheat	1 cup scant
Puffed rice	1 cup heaping
Rice (cooked)	1/2 cup scant
Shredded wheat	1/2 biscuit

C CONCENTRATED VITAMIN FOODS**I YEAST—2 cakes****II COD LIVER OIL—2 tablespoonfuls, or Haliver oil, 2 capsules before each meal**

In addition, the following alkaline and neutral foods may be used as desired

Alkaline foods Dairy products, including all cheeses, soups, except when made from meat stock, almonds, molasses, olives
Neutral foods Sweet butter, candy (no chocolate), cornstarch, lard, salad oil, sugar, coffee, tea, Kaffee Hag, Postum, olive oil, mayonnaise, tapioca.

The following list contains a few striking examples of foods which *must* be omitted because of their extremely high acid-ash content

Meat broths and soups, all breads and crackers except as listed above, all pastries and rich desserts, cranberries, peanuts, walnuts, popcorn, flour

Suggested Plan of Menu Sample Menu

BREAKFAST

Fruit	Orange juice - 1/2 cup
Cereal	Farina - 2/3 cup, cooked
Egg	1
Whole wheat toast	1 slice
Butter	Butter
Cream	1/2 cup
Milk	1 glass

LUNCH

Meat	Cold sliced lamb - 1 serving
Potato	Baked - 1 serving
Vegetable	Celery - 1 serving
Bread	whole wheat - 1/2 slice
Butter	Butter
Milk	1 glass
Fruit	Canned peaches - 1 serving

DINNER

Meat	Roast beef - 1 serving
Potato	Sweet potato - 1 serving
Vegetable	Cauliflower - 1 serving
Bread	Whole wheat - 1/2 slice
Butter	Butter
Milk	1 glass
Dessert	Vanilla ice cream

8 00 P M

1 glass

While the patient is in the hospital, he

FORMATION OF URINARY CALCULI

1627

is taught to make determinations of the pH of the urine with an apparatus manufactured by the LaMotte Chemical Products Company. After leaving the hospital, the determination is made daily, using the second specimen voided before breakfast in order to avoid the effect of the alkaline tide and awakening respirations. The report of the daily readings is presented at monthly intervals to the physician who may alter the diet or medication in accordance with the level of the pH of the urine.

Vitamin A is administered in the form of haliver-in-oil or carotene-in-oil capsules while vitamin B may be added to the diet by prescribing yeast. By careful control of the pH of the urine, in addition to the other therapeutic measures commonly employed, the formation of recurrent calculi can be reduced to a minimum. Since this dietary regimen has been added to our postoperative armamentarium in

the last four years, the incidence of the recurrent formation of calculi has been reduced from 16.4 to 4.7 per cent.

Conclusions

- 1 Recurrent formation of calculi occurs with sufficient frequency to present a serious complicating factor in the surgical management of renal lithiasis.
- 2 By dietary means, the precipitation of salts essential for the formation of calculi can be prevented.
- 3 Each patient must be individualized and the closest cooperation between the physician and the patient is essential.
- 4 During the last four years, the incidence of recurrent calculi has been reduced from 16.4 to 4.7 per cent by the use of a dietary regimen in conjunction with other therapeutic procedures which have been employed in the past.

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Discussion

ganisms, animals developed stones, does not permit us to ignore entirely the part which infection may play.

The *Proteus bacillus* offers a serious problem when observed in the presence of recurring lithiasis. What part the infection plays is not clear. From a study of diverticula in the bladder of prostatic obstruction, and of obstruction in the ureters, we learn that stasis is a frequent concomitant work of recurrent lithiasis. The excellent work of Chute has called our attention to the increased activity of the parathyroid gland as a factor in the disease. However, it is not impossible for hyperparathyroidism and a dietary deficiency to occur in the same patient.

Many excellent articles have been published and much work done on these prevalent theories relative to the causation of renal calculus and it is interesting to find that, in spite of their wide divergence, they are after all rather closely interrelated. Probably no single factor is instrumental in the production of all stones. The experimental work of Dr. Higgins in

Dr. LEO E. GIBSON, Syracuse—I am very glad to have the opportunity to hear Dr. Higgins' paper and like all of his contributions, it has been very interesting and instructive. Regardless of whether one believes in his theory or not, he has done a great amount of hard work which certainly has been very progressive in nature. Since the time that a urinary stone was identified as a factor producing renal degeneration, physicians have vainly sought for the etiology of its formation and a method for its dissolution.

The trend of most recent contributions to this subject would lead one to believe that the fundamental etiological factor involved is of a chemical nature rather than bacteriologic. It is evident that some disturbance of metabolism affecting the urine either through the colloids or the effect upon the epithelium, permits precipitation of the stone forming element. On the other hand, the work of Rosenow, demonstrating streptococci in the teeth of patients forming recurring stones, and following inoculation of cultures of these or-

vitamin A deficiency has given priority to the dietary theory as the most satisfactory mechanism of calculus formation

I believe that Dr Higgins attempts to visualize the kidney as an organ which has different states of being according to those of the body in which it lies. Such persistent body conditions as dietary deficiency and hyperparathyroidism must produce certain changes in the kidney. He regards calculus as an affect produced by such changes and directs his efforts toward eliminating the cause. The mere operative procedure of removing calculi is only one phase in the correct management of renal lithiasis.

In his study he has not abandoned the older conceptions of recurrent calculus formation but he has searched for their presence and if found they are properly treated. He considers focal infections as well as the infected genitourinary tract. Tests are made for the presence of cystinuria, phosphaturia, and oxaluria. He finds the *Proteus bacillus* infection a difficult one to treat by his method or any other method. Stasis is ruled out by means of the intravenous pyelogram, and a ureteral stricture, if found, is dilated in the proper manner. The factors of urostatics and infection which are known to be associated with calculus formation in the majority of cases must not be disregarded by the discovery and application of this new dietary regime.

I think we are all a bit surprised by the prevalence of the vitamin A deficiency found by Dr Higgins. This discrepancy in our work may be due to the fact that we have not been diligent enough in seeking the evidence of that disturbance. My understanding is that it is necessary for only a mild degree of vitamin deficiency to exist over a long period of time in order

to produce calculus formation. Where a vitamin A deficiency occurred it is not invariably associated with calculi.

One thing which is not very clear to me is the origin of the primary initiating lesion. It is assumed that there is a primary papillary or calyceal ulceration caused by vitamin A deficiency. Is there sufficient proof that this lesion is not caused by the infection which is present with most stones? In those cases without infection some trophic or allergic change might be responsible. We have been able to relieve infection by increasing the acidity of the urine. The question arises then as to how much importance one may attribute to the acidity factor and to the vitamin.

There are one or two precautions which might be emphasized in the administration of acid producing drugs. First, the administration of ammonium chloride in the presence of urea splitting organisms produces additional urea for the organisms to work on, the ammonium chloride being a nitrogenous compound. One would expect the condition to be aggravated rather than improved. A production of too much acidity as shown by reducing the pH too strongly, may cause a precipitation of uric acid salt. It is necessary, therefore, to carry out a thorough and diligent study of the urine of these patients at all times.

I would like to ask Dr Higgins how long he keeps these patients on this dietary regime and what are the indications, if any, for discontinuing the diet in the patient with a tendency toward recurrent calculus. A second question, in those cases of *Proteus* infection in which he does a pyelotomy or a nephrotomy, does he find that a secondary infection, which is probably *Staphylococcus* from the skin, becomes persistent in the kidney?

DENTAL OFFICE IN A COVERED WAGON'

The State of Indiana is sending a streamlined trailer dental office on the road to give needy children sound teeth.

The trailer, equipped with dental chair of latest design, laboratory, sterilizer, work bench, instrument cabinet, hot and cold running water, clothes closet, leather divan and modern lighting facilities, has been planned jointly by the Indiana State Dental Association and the State Bureau of Child and Maternal Health.

Thousands of children between three and ten years old whose parents are on relief are to get dental attention when the trailer reaches their home communities. The trailer is to work only in smaller

towns where clinics are not available to the needy.

Services are to be limited to prophylaxis, cement and amalgam fillings and extractions. Cases will be designated by local health agencies and dentists.

Dr Marv H. Westfall, head of the dental division of the Bureau of Maternal and Child Health, says the decision to equip a dental trailer results from a survey by Indiana dentists showing that large numbers of children in so-called "backward" counties have little or no dental care in their early years.

The only way to cope with this situation, she says, is to take the dentist to the child.

TREATMENT OF ALOPECIA AREATA

HERBERT H BAUCKUS, M D, CARL F SIEKMANN, M D,
and ALBIN V KWAK, M D, *Buffalo*

It is indeed difficult to frankly evaluate treatment in such a capricious disease as alopecia areata. At the outset the writer and his associates wish to emphasize that their tendency is to err on the side of therapeutic nihilism and that their conclusions are drawn, not from recent favorable cases but from recorded observations during several years of active private and clinical practice.

It seems that the therapy of the hair is still rather sadly neglected by the modern practitioner and dermatologist. Undoubtedly it is partly our fault that the public goes to other courses for advice and treatment—even for diagnosis. So many are the varied and new chemical substances constantly being added for use in the beauty parlor that one must ever be on the alert to detect the etiology and new sources of allergic dermatitis and dermatitis venenata. With these thoughts in mind we write to briefly outline a treatment which we think gives us unexpectedly good results in alopecia areata.

No one treats fairly and well without having etiology constantly in mind. Unfortunately we know little about the cause of the disease in question. It seems that the trophoneurotic etiology inter-related with endocrine toxic factors now has quite general acceptance. There are of course reasons for belief in the parasitic or infectious theory¹. Some of the apparently epidemic cases have been thought to be due to manipulation as shown by Davis². We have been especially interested in the relationship between the endocrines and alopecia areata. In these cases it appears that a toxic factor is a necessary adjunct in the process. Richova³ suggests that the clinical picture of thallium acetate alopecia is identical with that of alopecia areata caused by hypothyroidism and records a case of thallium poisoning with the decreased metabolism and general features of hypothyroid disturbance. Kugelmass⁴ reports a case recovering with care of hypothyroidism in a child and

Hollander⁵ a case regarded by him as endocrine dysfunction due to syphilitic toxin. Ayers⁶ reports a case of vitiligo and alopecia areata associated with severe hyperthyroidism. The effect of the pituitary has been observed by Bengston⁷ and by Lord⁸. The general subject of etiology is intriguing and the literature voluminous, but the fact remains that we do not definitely know what causes alopecia areata and there are some who are not convinced of the efficacy of any kind of treatment.

In attempting to mostly confine this brief presentation to a therapeutic method, we will dismiss the important subject of etiology with a report of the following cases.

A young man of twenty, apparently in good health came in accidental contact with an electric current sufficient to throw him to the floor and render him momentarily unconscious. He had no further symptoms until exactly four weeks later several patches of alopecia areata appeared in the scalp. New lesions appeared rapidly and within a month alopecia areata universalis was present. After six months this patient began to recover and in two years was well.

With the usual variations for individual patients our method of treatment has been as follows:

Explanatory talk with the patient or in the case of very young patients, the parents or guardian. This is intended to guard against loss of confidence from the appearance of new lesions and is generally designed to put the patient in a more cheerful and optimistic mental state. Of course, rash promises are harmful. We think that the more severely worried, pessimistic, and hypochondriac sufferers have poorer results. Possibly this is putting the cart before the horse. But we believe there is much to mental rest in caring for this disease. Patients, young and old, are urged to have plenty of sleep—early to bed and with fresh air. We urge physical rest and freedom from exhaustion with effort to live out of doors in seasonable weather. We advocate avoidance of alcohol, and especially in children a well-balanced diet that is vitamin

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 29, 1936*

sufficient. Adult patients usually like to know about the question of syphilis, and physical examination and laboratory tests, here again, are much better medicine than optimistic assurances. Some may question the necessity or value of the above general measures. We think they are of much aid and are somewhat neglected. But most physicians agree that local stimulating treatment is of value. In 1920 Howard Fox⁹ reported a series of fifty cases treated with ultraviolet ray. This article aroused much interest in the treatment of alopecia areata and marked a distinct advance in therapy. We regard the efficacy of this treatment due to its production of an erythema. In children there may be an additional internal effect. We think the erythema of ultraviolet ray endures longer and is more easy to control than that caused by other external irritation. Treatments at intervals of as long as one to three weeks will dissipate the sad white and bring forth the more welcome pink of the recovering scalp. We do not think daily or tri-weekly applications of ultraviolet ray improves the therapy. We attempt to avoid vesication. Even with the ultraviolet ray treatment we seek to have patients apply a general mild stimulating lotion to the scalp each night. We like bichloride of mercury to be in the lotion, and often employ the following simple preparation: Hydrarg bichlor 45, liquor carbonis detergens 6.00, alcohol sixty per cent qs ad 180.00. We use ammoniated mercury ten per cent in ungt. aq. rosae to the affected areas in the bearded region and in the eyebrows. We think the lesions of the beard are more difficult to treat than those of the scalp. If ultraviolet ray is not available, substances such as creosote, tricresol, cantharidis, spirit of turpentine, and chrysarobin may be used. Beerman¹⁰ reports a successful case treated with dihydroxy anthrasol 25, plus ultraviolet ray. We think these irritants ought not to be employed in sufficient strength to cause vesication. A severe reaction, necessitating interruption of treatment for several days, interferes with the production of a desirable stable erythema. We think that recurring cases of alopecia areata, the more generalized types, and middle-aged adults, are slower to respond to local treatment.

Three years ago we began to routinely employ small doses of desiccated thyroid extract in alopecia areata in private practice. There appeared to us a striking improvement in our therapy, and the comparison of our private case results with those of the clinics where therapy was the same except that thyroid was not given,

encouraged us to regard thyroid as a welcome adjunct in the therapeutic armamentarium. We realize the fact that thyroid is used with poor success in many atrophic diseases of the skin other than in myxedema. We do not note that many patients with alopecia areata have a low basal metabolism, decreased nitrogen exchange, or the clinical signs of more marked thyroid deficiency. We have tried and discarded other endocrines, including anterior lobe pituitary. Thyroid does affect the hair and occasionally the surviving hair of alopecia areata appears myxedematous. But we did not use thyroid with the idea alone of treating deficiency but with the plan of securing from it the slight stimulation which in many ways apparently has to do with the regrowth of the hair. We eliminated patients having clinical or laboratory tests indicative of hyperthyroidism unless the administration of the drug was approved by the internist. All other cases were given the treatment. The initial dose to adults and children over ten was one grain once a day of desiccated thyroid representing five grains of fresh gland substance containing 0.3 per cent iodine in organic combination. This dose was not increased for at least two weeks, but in suitable adults two grains of desiccated thyroid were prescribed at the end of that time, this dosage was kept up for a month. At the end of this time the dose was reduced to one grain. We try to avoid stimulation that would be sensible to the patient. We have not been impressed with the use of simple iodine in this disorder. Dealing with the question of alopecia areata alone, we think large doses of thyroid, especially early, to be harmful. We have not used free thyroxin. Since the addition of this type of thyroid medication in our work with alopecia areata we have concluded as follows:

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not think we were necessarily dealing with a hypothyroid process

The stimulating combination of the external production of erythema plus a possible internal endocrine encouragement by the thyroid seems to us to present a plausible explanation and reason for use of this method. Of course this paper does not pretend to display a new theory nor to make claims for unusually brilliant cures. We have purposely omitted the presentation of cases that stand out as striking examples of cure in this disease. Every physician has had them. Time and further experiments may rudely change our opinions and beliefs. We merely offer

the therapeutic suggestion that thyroid be more routinely employed in the treatment of alopecia areata and in certain other diseases of the hair

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Discussion

DR. FRANK C COMBES, *New York City*—Dr Bauckus has given us some valuable suggestions in the treatment of this capricious affection. He has not offered a new or spectacular method of handling the disease, but has presented some personal impressions gained in the management of a small series of cases observed both in his private practice and in the hospital. Undoubtedly there are many of us who have obtained equally as good results with other methods. In fact, I have frequently doubted whether my treatment of a case of alopecia areata was ever responsible for the regrowth of hair. At an informal discussion among a group of dermatologists several years ago, the opinion was expressed by some that they could not conscientiously treat a case of this disease, feeling that the new growth of hair would occur notwithstanding any medication which they might administer. This is rather an extreme view as a patient applies to his physician expecting relief and it is the duty of the physician to grant it to the best of his ability. This is especially true in a disease of this nature which is probably trophoneurotic in origin.

The prognosis in this disease is usually always good. If the patient is under forty years of age, you may confidently predict a complete recovery. There are so few exceptions that you may take the risk. The prognosis must not be too guarded. If it is, it is liable to effect the zeal of the patient in carrying out the prescribed treatment. Dr Bauckus has mentioned the psychic element in his therapeutic attack. This is of essential importance. Cooperation with the patient is the only way to hold him.

Since the disease so frequently follows mental shock, I have always wondered whether the methods employed in this treat-

ment did not effect the patient in a psychic manner. I doubt whether there are two persons in this room who treat it in the same way. Yet our results would probably compare favorably. Dr Bauckus believes that his cases are helped by thyroid medication. Possibly so, but the patients should be kept under observation during its administration which after all is essential to their mental well-being. The same may be said for ultraviolet radiation. Personally I prefer a one-quarter to two per cent bichloride of mercury solution in alcohol as a local counterirritant.

One element in the treatment is essential. Do not persist in the use of one method if it is not producing the desired result. Humor the patient by making a change. If this is not done, he will probably change not only his medicine, but also his physician. As the last medicine gets all the credit, so does the last physician.

DR. HERMAN GOODMAN, *New York City*—Celsus, as far back as the first century, recorded the observation that loss of hair—the pattern of alopecia areata—was of two types. It may be recalled, incidentally, that one of the synonyms for alopecia areata is alopecia celsi, or area celsi, referring to this learned gentleman.

Celsus noted that the prognosis of alopecia areata along the periphery of the scalp, which he called ophiasis type or band or ribbon or rein type, was poorer than the prognosis for loss of hair in the alopecia areata manner centrifugally in the scalp.

It would appear that this observation of Celsus was of greater importance than has been given it for many years.

Let us examine the nerve supply of the scalp. It is very simple to do this on the

sufficient. Adult patients usually like to know about the question of syphilis, and physical examination and laboratory tests, here again, are much better medicine than optimistic assurances. Some may question the necessity or value of the above general measures. We think they are of much aid and are somewhat neglected. But most physicians agree that local stimulating treatment is of value. In 1920 Howard Fox⁹ reported a series of fifty cases treated with ultraviolet ray. This article aroused much interest in the treatment of alopecia areata and marked a distinct advance in therapy. We regard the efficacy of this treatment due to its production of an erythema. In children there may be an additional internal effect. We think the erythema of ultraviolet ray endures longer and is more easy to control than that caused by other external irritation. Treatments at intervals of as long as one to three weeks will dissipate the sad white and bring forth the more welcome pink of the recovering scalp. We do not think daily or tri-weekly applications of ultraviolet ray improves the therapy. We attempt to avoid vesication. Even with the ultraviolet ray treatment we seek to have patients apply a general mild stimulating lotion to the scalp each night. We like bichloride of mercury to be in the lotion, and often employ the following simple preparation: Hydrarg. bichlor. 45, liquor carbonis detergens 600, alcohol sixty per cent qs ad 180 00. We use ammoniated mercury ten per cent in ungt. aq. rosae to the affected areas in the bearded region and in the eyebrows. We think the lesions of the beard are more difficult to treat than those of the scalp. If ultraviolet ray is not available, substances such as creosote, tricresol, cantharidis, spirit of turpentine, and chrysarobin may be used. Beerman¹⁰ reports a successful case treated with dihydroxy anthrasol 25, plus ultraviolet ray. We think these irritants ought not to be employed in sufficient strength to cause vesication. A severe reaction, necessitating interruption of treatment for several days, interferes with the production of a desirable stable erythema. We think that recurring cases of alopecia areata, the more generalized types, and middle-aged adults, are slower to respond to local treatment.

Three years ago we began to routinely employ small doses of desiccated thyroid extract in alopecia areata in private practice. There appeared to us a striking improvement in our therapy, and the comparison of our private case results with those of the clinics where therapy was the same except that thyroid was not given,

encouraged us to regard thyroid as a welcome adjunct in the therapeutic armamentarium. We realize the fact that thyroid is used with poor success in many atrophic diseases of the skin other than in myxedema. We do not note that many patients with alopecia areata have a low basal metabolism, decreased nitrogen exchange, or the clinical signs of more marked thyroid deficiency. We have tried and discarded other endocrines, including anterior lobe pituitary. Thyroid does affect the hair and occasionally the surviving hair of alopecia areata appears myxedematous. But we did not use thyroid with the idea alone of treating deficiency but with the plan of securing from it the slight stimulation which in many ways apparently has to do with the regrowth of the hair. We eliminated patients having clinical or laboratory tests indicative of hyperthyroidism unless the administration of the drug was approved by the internist. All other cases were given the treatment. The initial dose to adults and children over ten was one grain once a day of desiccated thyroid representing five grains of fresh gland substance containing 0.3 per cent iodine in organic combination. This dose was not increased for at least two weeks, but in suitable adults two grains of desiccated thyroid were prescribed at the end of that time, this dosage was kept up for a month. At the end of this time the dose was reduced to one grain. We try to avoid stimulation that would be sensible to the patient. We have not been impressed with the use of simple iodine in this disorder. Dealing with the question of alopecia areata alone, we think large doses of thyroid, especially early, to be harmful. We have not used free thyroxin. Since the addition of this type of thyroid medication in our work with alopecia areata we have concluded as follows:

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OXYGEN CONSUMPTION IN ORGANIC PSYCHOSES

J NOTKIN, M D, *Poughkeepsie*
Hudson River State Hospital

While the etiology of the organic psychoses is well-established the causal factors underlying some of the organic processes, as in arteriosclerosis and senile brain changes, are still unsettled. Most of the studies carried out in arteriosclerosis tend to indicate the possibility of metabolic disturbances. Among the outstanding investigators who are in favor of this theory are Kast¹ and Aschoff². Others like Hober³ and Glaser,⁴ emphasize the emotional factor and its effect on the cholesterol metabolism as the first step in arteriosclerosis. The relationship of cholesterol metabolism to arteriosclerosis was demonstrated by Autschkow and Chalatow^{5,6}. In senility the involutional processes may play an important part but there are still many problems to be solved.⁷ The degree of oxygen consumption being an indicator of the metabolism of the organism, basal metabolism determinations may give some lead to the mechanisms operating in the arteriosclerotic and senile processes. The present communication deals with the results of basal metabolism studies carried out in patients with various organic psychoses, such as arteriosclerotic and senile psychoses, dementia paralytica, alcoholic psychoses, and in other miscellaneous organic acute and chronic reactions caused by a variety of factors including head trauma, metabolic and somatic diseases, degenerative brain and cord changes, and exogenous poisons. Except for the utilization of Benedict's^{8,9} findings in a relatively small number of elderly normal people it was practically impossible to secure suitable controls. The aged schizophrenic institutional material or general hospital patients could not well serve the purpose in view of the additional elements involved. The study was made in two hospitals, one situated in New York City, the other in a rural district.

One hundred forty-seven patients with arteriosclerotic psychoses were tested. There was a tendency toward minus readings in the male group. Almost forty-

five per cent of the combined groups of men in both institutions showed very low basal metabolic readings (Tables I-IV). There was a relatively small percentage with high readings.

In relation to age there is a tendency to lower ratings in the older people of the urban group, while the rural patients showed a relatively low oxygen consumption rate in the sixty to seventy age group (Tables V-VIII). In relation to blood pressure the urban male group had the lowest average metabolic rate in the 150 to 180 intermediate blood pressure group while the rural male patients showed a relatively low average in the low blood pressure group (Tables IX-XII).

The group of fifty-three arteriosclerotic women patients were all inmates in the rural hospital. They showed equal average metabolic readings in all age groups, and a somewhat low average rating in the high blood pressure group (Tables XIII-XV).

There were definite differences in the results obtained in the two institutions. This disparity is somewhat difficult to explain. Regional and nutritional factors may have to be taken into consideration. In favor of such possibilities is the study made by Hafkesbrung and Bogstrom¹⁰. They found the basal metabolism in individuals residing in New Orleans fourteen to eighteen per cent lower than the accepted standards. Earle¹¹ also obtained in white residents of Hongkong and Peking a basal metabolism rating seven per cent below Du Bois' standards.

The patients with senile psychoses, especially the men, showed a pronounced tendency toward minus readings (Tables XVI and XVII). Very low ratings were recorded in fifty per cent of the male group. Correlated with age the male patients showed the lowest readings in the relatively young group, while the women patients had practically identical ratings in all age groups (Tables XVIII and XIX). Compared with the blood pres-

basis of toxicity of certain drugs to the sympathetic nerve endings. Let us go back to the effect which thallium acetate has on the hairy scalp.

First Depending upon the physiological age group, for example, before and after puberty. It is well-known that thallium acetate in proper dosage has the effect in preadolescence of causing the loss of hair generally from all the scalp.

Second Postadolescent persons given a similar dosage of thallium acetate have loss of hair which excludes the periphery of the scalp. This would indicate that the sympathetic nervous system which controls all the scalp in preadolescence has lost control of the hair growth at the periphery of the scalp in post-adolescence.

Further evidence of this change in nerve control is offered by the fact that long after the person has lost the hair in the male pattern known as the Hippocratic manner, the periphery of the scalp which retains the hair shows much more rapid growth of hair per unit of time than previously. With this groundwork, treatment of alopecia areata must depend upon physiological age.

If loss of hair occurs in a person before sexual maturity, treatment should be directed towards stimulants of the sympathetic nerve endings no matter where the loss of hair in the scalp occurs. Unfortunately, such sympathetic nerve stimulants are not definitely known either in pharmacology or in dermatology. On the basis of experience we have utilized pilocarpine hydrochloride, both topically and by local injection into areas of alopecia areata. Our success or failure with this method, unfortunately, has been no different than any other methods utilized.

We have also sought to eradicate what might conceivably be the cause of the sympathetic ending depressant action.

In our experience the heavy metals have been a fertile cause, and elimination of the heavy metals through the administration of sodium thiosulphate has attended the return of the hair. In this connection, it is important to note that loss of hair at the periphery of the scalp is resistant to treatment.

Our conclusion has been that such loss of hair resulted from some trauma to the central nervous system which was not relieved or released by the solvent action of sodium thiosulphate.

By and large, external treatment to the scalp by means of antiseptics, irritants, and the usual pharmacological messes miscalled "hair tonics" is useless. The specifics for hair growth proposed from time to time as hydrolyzed horn (a German importation), cholesterol, and lecithin have always failed in restoring hair in bald areas. We are

most pessimistic regarding purposeful repeatable hair regrowth. We still await control experimentation through treatments of half a head, if such is possible and elimination and regrowth of the treated side or the treatment of one or two identical twins with restoration in the treated twin. One might be facetious. One experiment in therapy for alopecia areata which would tend to be convincing, would be the treatment of three of the five quintuplets, provided they had alopecia areata and further that only the three treated ones had restoration of hair.

DR HOWARD FOX, *New York City*—The main difficulty in the treatment of alopecia areata is that we do not know any more about its causation than did Celsus in A.D. 25. It is very difficult to evaluate a therapeutic method in a disease which runs such a capricious course as alopecia areata, resulting in most cases in a spontaneous cure. As Dr Bauckus has mentioned my series of cases treated by quartz lamps, I would say that I did not ascribe any peculiar virtue to ultraviolet light but merely considered that the use of quartz lamps constituted a cleanly and convenient method of causing local stimulation. I should like to call attention to the unfortunate publicity given to an article on the treatment of baldness (mostly alopecia areata) by aututrin. To prove or disprove the author's contentions it was necessary to undertake a great amount of experimentation. This has resulted in a unanimous conclusion that this drug is of no value in alopecia areata.

DR. HERMANN FEIT, *New York City*—At the Eighth International Congress of Dermatology in Copenhagen (1930) I showed in cooperation with Drs Throne and Myers an abnormal basal metabolism in sixty-two per cent of 162 patients. The abnormal minus findings were about twice as large as the abnormal plus findings.

There was no relationship between the basal metabolic findings and the clinical picture. For example, a case showing only one small spot might give a minus twenty, and a case of complete loss of hair on the contrary give a plus normal.

The work I am doing now is based on the conception of alopecia areata as a functional disorder of the sympatheticus. Sympathin, the so-called sympathetic substance is created on the synopsis of the sympathetic nerve endings with the capillaries of the skin. Introduction of the vagus substance has given very encouraging results in a sufficient number of total and local cases of alopecia areata to warrant continuation of our work.

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sure readings, the men had low readings in the high blood pressure group while the women patients showed only a slight tendency to lower readings in the group

TABLE I

Basal metabolic rate in men with arteriosclerotic psychoses
(Combined Group)

1	-44	1	25	-18	1	49	-7	9	73	+5	1
2	-35	8	26	-17	7	50	-7	3	74	+5	2
3	-33	9	27	-17	5	51	-6	2	75	+5	4
4	-33	3	28	-17	4	52	-6	3	76	+5	6
5	-33	3	29	-16	8	53	-5	1	77	+7	3
6	-31	0	30	-16	6	54	-5	1	78	+8	9
7	-30	9	31	-16	4	55	-5	1	79	+9	3
8	-30	4	32	-15	2	56	-4	8	80	+9	4
9	-29	5	33	-15	2	57	-4	8	81	+9	5
10	-28	0	34	-14	2	58	-4	6	82	+10	1
11	-27	1	35	-13	4	59	-4	0	83	+11	1
12	-27	0	36	-12	8	60	-3	7	84	+12	2
13	-26	4	37	-12	4	61	-3	4	85	+13	1
14	-24	5	38	-12	4	62	-3	3	86	+13	1
15	-24	5	39	-12	0	63	-2	5	87	+13	2
16	-24	1	40	-12	0	64	-1	7	88	+13	2
17	-24	0	41	-11	6	65	-1	4	89	+15	5
18	-22	5	42	-11	4	66	+0	7	90	+17	4
19	-21	9	43	-10	3	67	+0	9	91	+21	0
20	-20	2	44	-9	5	68	+1	8	92	+21	7
21	-19	6	45	-9	2	69	+2	9	93	+24	3
22	-19	6	46	-9	2	70	+3	3	94	+32	1
23	-19	4	47	-9	2	71	+4	3			
24	-19	3	48	-9	0	72	+4	6			
Minus readings									69	14%	
Plus readings									30	85%	
Above +10 per cent									12	76%	
Between +10% and -10%									42	55%	
Below -10 per cent									44	68%	

TABLE II

Basal metabolic rate in men with arteriosclerotic psychoses
(Manhattan State Hospital Group)

1	-44	1	12	-26	4	23	-17	7	34	-4	8
2	-35	8	13	-24	5	24	-16	6	35	-4	8
3	-33	9	14	-24	5	25	-15	2	36	-4	6
4	-33	3	15	-24	1	26	-14	2	37	-4	0
5	-33	3	16	-24	0	27	-13	4	38	-3	3
6	-31	0	17	-22	5	28	-12	4	39	-1	7
7	-30	9	18	-21	9	29	-12	0	40	-1	4
8	-29	5	19	-19	6	30	-12	0	41	+9	4
9	-28	0	20	-19	6	31	-10	3	42	+13	2
10	-27	1	21	-19	4	32	-9	0	43	+21	0
11	-27	0	22	-18	1	33	-5	1	44	+21	7
Minus readings									90	91%	
Plus readings									9	09%	
Above +10 per cent									6	81%	
Between +10% and -10%									25	00%	
Below -10 per cent									68	18%	

TABLE III

Basal metabolic rate in men with arteriosclerotic psychoses
(Hudson River State Hospital Group)

1	-30	4	14	-9	2	27	+0	9	40	+9	5
2	-20	2	15	-9	2	28	+1	8	41	+10	1
3	-19	3	16	-9	2	29	+3	3	42	+11	1
4	-17	5	17	-7	9	30	+4	3	43	+12	2
5	-17	4	18	-7	3	31	+4	6	44	+13	1
6	-16	8	19	-7	2	32	+5	1	45	+13	1
7	-16	4	20	-6	3	33	+5	2	46	+13	2
8	-15	2	21	-5	4	34	+5	4	47	+15	5
9	-12	8	22	-5	1	35	+5	6	48	+17	4
10	-12	4	23	-3	7	36	+7	3	49	+24	3
11	-11	6	24	-3	4	37	+8	9	50	+32	1
12	-11	4	25	-2	5	38	+9	3			
13	-9	5	26	+0	7	39	+9	4			
Minus readings									50	0%	
Plus readings									50	0%	
Above +10 per cent									18	0%	
Between +10% and -10%									58	0%	
Below -10 per cent									24	0%	

TABLE IV

Summary of comparative findings
Per cent of cases

	Both groups				M.S.H	H.R.S.H
Minus readings	69	14	90	91	50	0
Plus readings	30	85	9	09	50	0
Above +10 per cent	12	76	6	81	18	0
Between +10% and -10%	42	55	25	00	58	0
Below -10 per cent	44	68	68	18	24	0

TABLE V

Basal metabolic rate in relation to age in men with arteriosclerotic psychoses (Combined Group)

86	-3	7	72	-20	2	64	-9	2	60	-24	5
84	+9	4	71	-12	0	64	-17	4	60	+21	7
83	+4	6	70	-4	0	64	-10	3	59	+7	3
82	-33	9	70	-9	0	64	-4	6	59	+32	1
79	-7	9	69	-19	3	64	-31	0	59	+4	3
79	-14	2	69	-2	5	63	+9	3	58	-33	3
78	+0	9	69	+0	7	63	+17	4	58	-17	7
77	+5	2	69	-44	1	63	-33	3	57	-9	2
76	-9	5	68	+13	1	63	-12	0	57	+21	0
76	-5	4	68	+8	9	62	-11	6	56	-16	8
76	-7	3	68	-26	4	62	+5	6	56	-1	7
76	-24	5	68	-13	4	61	-11	4	56	-29	5
76	-12	4	68	-19	6	61	-3	4	56	-5	1
76	+9	4	67	+11	1	61	-27	1	56	-15	2
75	-17	5	67	-7	2	61	-16	6	54	-12	4
75	-24	1	67	+13	1	60	-15	2	54	-1	4
75	-24	0	67	-30	4	60	+10	1	54	-22	5
75	-30	9	67	-28	0	60	+9	5	52	-16	4
74	+5	1	67	-12	8	60	+24	3	52	-4	8
74	+12	2	66	-6	3	60	-3	3	50	+13	2
74	-21	9	66	+5	4	60	+13	2	49	-19	4
73	-5	1	66	-19	6	60	-35	8	48	-9	2
73	+3	3	65	+15	5	60	-27	0			
73	+1	8	65	-18	1	60	-4	8			

Age groups Per cent of cases
86 to 70 29 78
69 to 60 48 93
59 to 48 21 27

Age groups	Average B.M.R.	Ratio
86 to 70	-13 74	2 1
	+7 35	1
69 to 60	-16 62	2
	+14 26	1
59 to 48	-13 93	3
	+17 61	1

TABLE VI

Basal metabolic rate in relation to age in men with arteriosclerotic psychoses (Manhattan State Hospital Group)

82	-33	9	70	-9	0	63	-33	3	58	-33	3
79	-14	2	69	-44	1	63	-12	0	58	-17	7
76	-24	5	68	-26	4	61	-27	1	57	+21	0
76	-12	4	68	-13	4	61	-16	6	56	-1	7
76	+9	4	68	-19	6	60	-3	3	56	-29	5
75	-24	1	67	-28	0	60	+13	2	56	-5	1
75	-24	0	66	-19	6	60	-35	8	56	-15	2
75	-30	9	65	-18	1	60	-27	0	54	-1	4
74	-21	9	64	-10	3	60	-4	8	54	-22	5
71	-12	0	64	-4	6	60	-24	5	52	-4	8
70	-4	0	64	-31	0	60	+21	7	49	-19	4

Age groups Per cent of cases
86 to 70 27 27
69 to 60 47 00
59 to 48 25 70

Age groups	Average B.M.R.	Ratio
86 to 70	-19 17	11
	+9 4	1
69 to 60	-21 02	9 5
	+17 45	1
59 to 48	-15 06	10
	+21 0	1

TABLE VII

Basal metabolic rate in relation to age in men with arterio-sclerotic psychoses (Hudson River State Hospital Group)											
86	- 3 7	73	+ 3 3	66	- 6 3	60	+ 9 5				
84	+ 9 4	73	+ 1 8	66	+ 5 4	60	+24 3				
83	+ 4 6	72	-20 2	65	+15 5	59	+ 7 3				
79	- 7 9	69	-19 3	64	- 9 2	59	+32 1				
78	+ 0 9	69	- 2 5	64	-17 4	59	+ 4 3				
77	+ 5 2	69	+ 0 7	63	+ 9 3	57	- 9 2				
76	- 9 5	68	+13 1	63	+17 4	56	-16 8				
76	- 5 4	68	+ 8 9	62	-11 6	54	-12 4				
76	- 7 3	67	+11 1	62	+ 5 6	52	-16 4				
75	-17 5	61	- 7 2	61	-11 4	50	+13 2				
74	+ 5 1	67	+13 1	61	- 3 4	48	- 9 2				
74	+12 2	67	-30 4	60	-15 2						
73	- 5 1	67	-12 8	60	+10 1						
Age groups		Per cent of cases									
86 to 70		32 00									
69 to 60		50 00									
59 to 48		18 00									
Age groups		Average B M R.		Ratio							
86 to 70		- 8 32		1							
		+ 5 31		1							
69 to 60		-12 22		0 9							
		+11 07		1							
59 to 48		-12 8		1 2							
		+14 22		1							

TABLE VIII

Basal metabolic rate in relation to age in men with arteriosclerotic psychoses — summary of comparative findings — per cent of cases

Age groups	Both groups	M.S.H	H.R.S.H
86 to 70	29 78	27 27	32 00
69 to 60	48 93	47 70	50 00
59 to 48	21 27	25 00	18 00

Basal metabolic average rates						
Age groups	Both groups	Ratio	M.S.H	Ratio	H.R.S.H	Ratio
86 to 70	-13 74	2 1	-19 17	11	-8 32	1
	+ 7 35	1	+ 9 4	1	+5 31	1
69 to 60	-16 62	2	-21 02	9 5	-12 22	0 9
	+14 26	1	+17 45	1	+11 07	1
59 to 48	-13 93	3	-15 06	10	-12 8	1 2
	+17 61	1	+21 0	1	+14 22	1

with increased blood pressure (Tables XX and XXI)

Although the low averages approximate those obtained by Benedict in a group of normal old people our findings tend to indicate that the gradual decrease in the oxygen consumption seems to reach its limit at the age of seventy. However, the psychic element of our patients has to be reckoned with in making comparisons with so-called normal controls.

A group of sixty-five untreated parietic patients showed a prevalence of minus readings amounting to 83.07 per cent and a high incidence of 58.46 per cent of very low readings, a low average reading in the 60 to 40 age group and in the 170 to 130 blood pressure group (Tables XXII-XXIV). In a group of 106 treated patients the percentage of very low readings was almost half of that recorded in the

untreated group (Tables XXV-XXX). It may be of some interest that normal basal metabolic ratings were obtained in patients who improved physically but not mentally following the usual treatment with malaria, arsenicals, and bismuth. There were slight differences in the average readings in both sexes, both in relation to the age and blood pressure (Tables XXXI-XXXIII). The significant findings in the tabetic group are the low average metabolic readings in the 190 to 150 blood pressure group and in the 60 to 51 age group, the relatively higher average in the 130 to 120 blood pressure group as compared with the similar group in the cerebral type (Table XXXIV). It is of interest that the combined treated group of men and women and both groups separately showed almost identical average metabolic readings.

In the alcoholic group there was a predominance of minus readings amounting to seventy-five per cent, very low readings in about forty-five per cent, and a tendency to approximately normal averages in the chronic cases where the toxic element of the alcohol is no longer present. Low oxygen consumption rates were recorded in the acute psychoses (Tables XXXV-XXXVIII).

In a small group of cases with traumatic psychoses there was a definite prevalence of very low readings (Table XXXIX). Low readings were also observed in single cases with psychoses due to veronal and illuminating gas poisoning.

In a group of cases with psychoses due to various types of brain and cord changes two cases of paralysis agitans, two siblings with Wilson's disease, and one case of Charcot-Marie-Tooth, had basal metabo-

TABLE IX

Basal metabolic rate in relation to blood pressure in men with arteriosclerotic psychoses (Combined Group)

Bl pr	B M R	Bl pr	B M R	Bl pr	B M R
230/170	+21 0	170/70	-5 4	150/60	-16 4
230/95	-18 1	170/70	-9 2	150/90	-11 4
220/130	-2 5	170/85	-16 8	150/110	-9 5
220/110	-1 4	170/90	-14 2	150/100	+10 1
210/100	-29 5	170/105	-12 4	150/80	-30 9
210/150	-16 6	170/90	+9 4	150/100	-19 6
200/120	+17 4	170/120	-24 1	150/90	-4 6
200/115	+32 1	170/90	-33 3	150/80	-27 1
200/120	-5 1	170/90	-21 9	150/90	+13 2
200/120	+21 7	170/85	-35 8	150/80	-27 0
194/112	-7 2	170/90	-13 4	150/80	-4 8
190/90	-19 3	168/94	-17 5	150/90	-22 5
190/115	+13 2	168/96	-9 2	145/65	+13 1
190/80	-17 4	168/80	+4 3	144/80	+7 3
190/110	-19 4	166/102	+3 3	140/70	+0 9
190/100	-28 0	165/85	+4 6	140/70	-4 0
188/106	+12 2	165/85	-26 4	140/80	-24 5
185/90	+5 6	160/110	+29 4	138/60	+9 5
184/84	-33 9	160/90	-9 2	135/95	-12 4
180/114	+9 3	160/90	+0 7	134/90	+5 4
180/80	+8 9	160/100	-11 6	130/100	-20 2
180/95	-7 9	160/85	-7 3	130/75	+13 1
180/90	-12 8	160/95	+5 1	130/90	-1 7
180/80	-9 0	160/80	-44 1	125/95	-4 8
180/90	-17 7	160/90	-33 3	124/58	-3 7
180/96	-31 0	160/90	-12 0	120/80	+24 3
180/96	-19 6	160/90	-15 2	120/70	-24 0
178/80	-3 3	158/76	-30 4	110/60	-10 3
175/100	+5 2	158/80	+15 5	110/60	-12 0
170/103	-5 1	155/90	-3 4	110/70	-24 5
170/94	-11 1	154/96	-15 2		
170/90	-6 3	150/86	+1 8		

Bl pr syst	Per cent of cases
230 to 180	28 72
179 to 151	38 29
150 to 110	32 97

Bl pr syst	Average B M R	Ratio
230 to 180	-15 14	$\frac{2}{1}$
	+17 72	$\frac{1}{1}$
179 to 151	-16 76	$\frac{2 6}{1}$
	+9 10	$\frac{1}{1}$
150 to 110	-14 19	$\frac{2 1}{1}$
	+13 35	$\frac{1}{1}$

TABLE X

Basal metabolic rate in relation to blood pressure in men with arteriosclerotic psychoses (Manhattan State Hospital Group)

Bl pr	B M R	Bl pr	B M R	Bl pr	B M R
230/170	+21 0	170/90	-14 2	150/90	-4 6
230/95	-18 1	170/105	-12 4	150/80	-27 1
220/110	-1 4	170/90	+9 4	150/90	+13 2
210/100	-29 5	170/120	-24 1	150/80	-27 0
210/150	-16 6	170/90	-33 3	150/80	-4 8
200/120	-5 1	170/90	-21 9	150/90	-22 5
200/120	+21 7	170/85	-35 8	140/70	-4 0
190/110	-19 4	170/90	-13 4	140/80	-24 5
190/100	-28 0	165/85	-26 4	130/90	-1 7
184/84	-33 9	160/80	-44 1	125/95	-4 8
180/80	-9 0	160/90	-33 3	120/70	-24 0
180/90	-17 7	160/90	-12 0	110/60	-10 3
180/96	-31 0	160/90	-15 2	110/60	-12 0
180/96	-19 6	150/80	-30 9	110/70	-24 5
178/80	-3 3	150/100	-19 6		

Bl pr syst	Per cent of cases
230 to 180	31 81
179 to 151	31 81
150 to 110	36 36

Bl pr syst	Average B M R	Ratio
230 to 180	-19 10	$\frac{6}{1}$
	+21 35	$\frac{1}{1}$
179 to 151	-22 26	$\frac{13}{1}$
	+9 40	$\frac{1}{1}$
150 to 110	-16 12	$\frac{15}{1}$
	+13 20	$\frac{1}{1}$

TABLE XI

Basal metabolic rate in relation to blood pressure in men with arteriosclerotic psychoses (Hudson River State Hospital Group)

Bl pr	B M R	Bl pr	B M R	Bl pr	B M R
220/130	-2 5	170/70	-5 4	154/96	-15 2
200/120	+17 4	170/70	-9 2	150/86	+1 8
200/115	+32 1	170/85	-16 8	150/60	-16 4
194/112	-7 2	168/94	-17 5	150/90	-11 4
190/90	-19 3	168/96	-9 2	150/110	-9 5
190/115	+13 2	168/80	+4 3	150/100	+10 1
190/80	-17 4	166/102	+3 3	145/65	+13 1
188/106	+12 2	165/85	-4 6	144/80	+7 3
185/90	+5 6	160/110	+29 4	140/70	+0 9
180/114	+9 3	160/90	-9 2	138/60	+9 5
180/95	-7 9	160/90	+0 7	135/95	-12 4
180/90	-12 8	160/100	-11 6	134/90	+5 4
175/103	+5 2	160/85	-7 3	130/100	-20 2
170/94	-5 1	160/95	+5 1	130/75	+13 1
170/90	+11 1	158/76	-30 4	124/58	-3 7
	-6 3	155/90	+15 5	120/80	+24 3
			-3 4		

Bl pr syst	Per cent of cases
230 to 180	26 00
179 to 151	44 00
150 to 110	30 00

Bl pr syst	Average B M R	Ratio
230 to 180	-11 18	$\frac{0 8}{1}$
	+14 10	$\frac{1}{1}$
179 to 151	-11 27	$\frac{1 4}{1}$
	+8 8	$\frac{1}{1}$
150 to 110	-12 26	$\frac{0 6}{1}$
	+9 5	$\frac{1}{1}$

ism readings within normal limits, while another case of Charcot-Marie-Tooth and a case of Pick's disease, showed low readings. A case of Huntington's chorea had a high rating. A few other cases with psychoses caused by somatic or metabolic disorders had with a few exceptions normal basal metabolic rates.

The question whether the lowered oxygen consumption in our cases with arteriosclerotic and senile psychoses is primary or secondary must still be left open. The decreased use of oxygen may be secondary to the nutritional disturbances caused by the waste product accumulation and vessel wall changes. A lowered oxygen use in itself, however, may give rise to similar structural changes. The low basal metabolic rates obtained by Benedict in elderly mentally normal people without external signs of senile or arteriosclerotic changes is a point in favor of this theory. Involutional changes, particularly in thecretory system, may be the underlying cause. Such an assumption requires, of course, an elucidation of the factors which determine the process of involution especially at an earlier age.

In dementia paralytica, alcoholic and traumatic psychoses and in all other organic reactions in which the underlying

TABLE XII

Basal metabolic rate in relation to blood pressure in men with arteriosclerotic psychoses — summary of comparative findings — per cent of cases

Bl. pr. syst	Both groups	M.S.H.	H.R.S.H.
230 to 180	28 72	31 81	26 00
179 to 151	38 29	31 81	44 00
150 to 110	32 97	36 36	30 00

Basal metabolic average rates

Bl. pr. syst	Both groups	Ratio	M.S.H.	Ratio	H.R.S.H.	Ratio
230 to 180	-15 14	2	-19 10	6	-11 18	0 8
	+17 72	1	+21 35	1	+14 10	1
179 to 151	-16 76	2 6	-22 26	13	-11 27	1 4
	+9 10	1	+9 40	1	+8 8	1
150 to 110	-14 19	2 1	-16 12	15	-12 26	0 6
	+13 35	1	+13 20	1	+9 5	1

TABLE XIII

Basal metabolic rate in women with arteriosclerotic psychoses

1	-33 4	15	-10 3	29	-1 5	43	+10 2
2	-29 5	16	-9 7	30	-0 8	44	+11 2
3	-26 1	17	-9 4	31	+0 8	45	+11 3
4	-22 1	18	-9 1	32	+1 1	46	+11 3
5	-19 3	19	-8 7	33	+2 1	47	+11 4
6	-17 3	20	-6 9	34	+3 5	48	+12 3
7	-14 6	21	-6 2	35	+5 8	49	+14 4
8	-14 5	22	-5 5	36	+6 7	50	+14 5
9	-14 2	23	-5 4	37	+7 2	51	+17 3
10	-13 4	24	-4 9	38	+8 7	52	+18 5
11	-13 2	25	-4 3	39	+9 1	53	+34 1
12	-12 4	26	-4 0	40	+9 2		
13	-11 5	27	-3 7	41	+9 7		
14	-10 5	28	-2 5	42	+10 0		
Minus readings						56	60%
Plus readings						43	40%
Above +10 per cent						18	86%
Between +10% and -10%						56	60%
Below -10 per cent						24	52%

TABLE XIV

Basal metabolic rate in relation to age in women with arteriosclerotic psychoses

81	+11 3	70	+18 5	64	3 3	4	59	-14 5
79	-10 5	70	-26 1	64	-9 1	57	+2 1	
78	+1 1	70	-8 7	64	-29 5	56	+10 2	
74	-13 4	70	-14 6	63	-9 4	56	+8 7	
73	+14 5	70	+5 8	62	-9 7	56	+11 4	
73	-4 0	68	-14 2	62	+10 0	56	-17 3	
73	+0 8	67	+34 1	62	-11 5	55	+9 1	
72	-4 3	65	-5 5	62	+11 3	53	-12 4	
72	-4 3	65	-3 7	62	-13 2	53	-5 4	
72	+9 2	65	+14 4	61	-0 8	52	-10 3	
72	+12 3	65	+7 2	61	+3 5	52	-11 2	
70	-4 9	65	+6 7	61	+9 7			
70	+17 3	65	-1 5	60	-2 5			
70	-22 1	64	-19 3	60	-6 9			

Age groups	Per cent of cases	Average B.M.R.	Ratio
81 to 70	35 84	-11 48	1 1
		+10 09	1
69 to 60	43 39	-11 42	1 8
		+11 21	1
59 to 52	20 73	-11 9	0 9
		+8 78	1

mechanism of the structural and physiological changes are more or less known, the lowered oxygen consumption must be considered as secondary to the cellular alterations

Conclusions

Basal metabolism in individuals with

TABLE XV

Basal metabolic rate in relation to blood pressure in women with arteriosclerotic psychoses

236/92	-4 0	175/115	-6 2	154/82	-1 5
230/110	-8 7	175/100	-13 4	150/90	+9 2
216/106	-19 3	175/95	+1 1	150/80	-14 5
200/85	-17 3	172/100	-0 8	150/110	+11 2
200/110	-2 5	170/80	+11 4	150/70	+5 8
200/120	-9 7	170/95	+10 0	148/68	+11 3
200/110	+11 3	170/68	-26 1	145/75	-5 5
196/94	-33 4	168/60	+2 1	144/77	+9 1
190/100	+17 3	166/88	+12 3	140/78	+8 7
190/115	-29 5	165/65	+9 7	140/90	+14 4
190/105	-9 4	165/110	-6 9	135/85	+14 5
188/96	-10 3	162/80	-4 9	135/100	-14 6
186/112	-12 4	160/85	-22 1	130/95	+10 2
185/100	+0 8	160/95	+18 5	125/85	+7 2
180/110	-10 5	160/100	+34 1	122/82	+3 3
180/100	+6 7	160/95	-5 4	118/68	-11 5
180/100	-4 3	158/82	-3 7	114/66	-9 1
178/90	-14 2	156/104	-13 2		

Bl. pr. syst	Per cent of cases	Average B.M.R.	Ratio
236 to 180	32 07	-13 17	3 2
		+9 01	1
179 to 151	37 73	-9 86	1 5
		+12 40	1
150 to 114	30 18	-9 04	1
		+9 55	2

TABLE XVI

Basal metabolic rate in men with senile psychoses

1	-33 3	5	-13 4	9	-9 8	13	-3 7
2	-21 0	6	-12 5	10	-6 2	14	-0 9
3	-21 0	7	-12 2	11	-4 7	15	+1 5
4	-15 1	8	-10 7	12	-4 6	16	+1 8
Minus readings							87 50%
Plus readings							12 50%
Above +10 per cent							0 0%
Between +10% and -10%							50 00%
Below -10 per cent							50 00%

TABLE XVII

Basal metabolic rate in women with senile psychoses

1	-30 6	6	-13 5	11	-4 1	16	+12 6
2	-20 1	7	-11 0	12	-3 5	17	+13 5
3	-18 3	8	-10 6	13	+4 3	18	+14 0
4	-17 4	9	-10 3	14	+5 3	19	+16 3
5	-15 7	10	-5 4	15	+10 5	20	+21 1
Minus readings							60 00%
Plus readings							40 00%
Above +10 per cent							25 00%
Between +10% and -10%							40 00%
Below -10 per cent							35 00%

arteriosclerotic and senile psychoses was found to be decreased. Patients with arteriosclerotic and senile psychoses residing in the metropolitan area showed a greater tendency toward low basal metabolism ratings than patients living in rural districts.

In untreated patients with dementia paralytica the basal metabolism readings tend to be low. In treated patients with

TABLE XVIII

Basal metabolic rate in relation to age in men with senile psychoses

80	+ 1 8	74	-12 2	73	- 0 9	70	- 4 6
79	-33 3	73	- 6 2	72	-21 0	68	- 9 8
77	+ 1 5	73	-12 5	71	- 4 7	67	-10 7
75	- 3 7	73	-15 1	70	-13 4	65	-21 0

Age groups	Per cent of cases	Average B.M.R.
80 to 70	81 25	-11 60 + 1 65
69 to 65	18 75	-13 83 + 0

TABLE XIX

Basal metabolic rate in relation to age in women with senile psychoses

87	+ 5 3	75	-30 6	73	+14 0	70	+16 3
83	- 4 1	75	-18 3	73	- 3 5	70	-11 0
83	-15 7	75	+12 6	72	+ 4 3	67	-10 3
76	+10 5	74	+20 1	71	-20 1	65	+13 5
75	- 5 4	73	-13 5	71	-10 6	64	-17 4

Age groups	Per cent of cases	Average B.M.R.
87 to 70	85 00	-13 27 +11 87
69 to 64	15 00	-13 85 +13 5

TABLE XX

Basal metabolic rate in relation to blood pressure in men with senile psychoses

Bl	Pr	B.M.R.	Bl	Pr	B.M.R.	Bl	Pr	B.M.R.
175/90	+ 1 5	140/90	-10 7	120/60	- 5 3	4		
170/90	-33 3	140/75	-13 4	120/70	- 3 7			
160/100	- 6 2	132/98	-21 0	110/85	+ 1 8			
155/100	-12 5	130/70	- 9 8	110/95	- 0 9			
155/85	-12 2	130/50	- 4 7					
148/88	-15 1	130/90	-21 0					

Bl pr syst	Per cent of cases	Average B.M.R.
175 to 150	31 25	-16 05 + 1 5
149 to 110	68 75	-10 49 + 1 8

TABLE XXI

Basal metabolic rate in relation to blood pressure in women with senile psychoses

Bl	Pr	B.M.R.	Bl	Pr	B.M.R.	Bl	Pr	B.M.R.
165/90	- 4 1	138/50	-13 5	120/95	+ 5 3			
160/90	-30 6	137/76	-10 6	120/100	-10 3			
155/100	+12 6	135/75	-15 7	115/90	-20 1			
152/84	-11 0	130/100	- 3 5	112/80	-17 4			
145/95	+13 5	128/80	+20 1	110/80	+14 0			
140/110	+16 3	122/70	+10 5	110/90	-18 3			
140/75	- 5 4	120/70	+ 4 3					

Bl pr syst	Per cent of cases	Average B.M.R.
165 to 150	20 00	-15 23 +12 6
149 to 110	80 00	-12 75 +12 0

dementia paralytica there is an improvement in the basal metabolism.

In acute alcoholic psychoses the basal metabolism is decreased, while in the chronic institutional cases the oxygen consumption rate is normal.

In traumatic psychoses the basal metabolism is lowered.

In other acute and chronic organic psychoses with known underlying causal factors the basal metabolism is not characteristic. However, relatively few patients of this type are available in state hospitals for an accurate study.

The question whether the lowered

TABLE XXII

Basal metabolic rate in dementia paralytica before treatment (65 cases)

1	-44 2	18	-20 3	35	-12 3	52	- 1 9
2	-40 8	19	-20 3	36	-11 8	53	- 1 9
3	-36 9	20	-19 3	37	-11 5	54	- 1 6
4	-33 8	21	-19 1	38	-11 1	55	+ 0 9
5	-32 1	22	-18 2	39	- 9 8	56	+ 1 6
6	-31 4	23	-18 0	40	- 8 6	57	+ 2 8
7	-30 7	24	-17 2	41	- 8 2	58	+ 3 4
8	-30 6	25	-17 1	42	- 7 8	59	+ 5 0
9	-30 5	26	-16 3	43	- 7 5	60	+ 6 6
10	-30 0	27	-15 5	44	- 7 0	61	+ 8 1
11	-27 5	28	-14 0	45	- 5 1	62	+ 8 5
12	-24 5	29	-13 4	46	- 5 1	63	+11 4
13	-24 5	30	-13 2	47	- 4 7	64	+12 0
14	-24 2	31	-13 1	48	- 3 6	65	+14 1
15	-22 9	32	-12 9	49	- 3 5		
16	-22 2	33	-12 6	50	- 2 2		
17	-21 8	34	-12 5	51	- 1 9		

Cerebral type	86 16%
Tubercle type	13 84%
Male sex	80 78%
Female sex	19 22%
Minus readings	83 07%
Plus readings	16 93%
Above +10 per cent	4 61%
Between +10% and -10%	36 92%
Below -10 per cent	58 46%

TABLE XXIII

Basal metabolic rate in relation to age in dementia paralytica before treatment

Age	B.M.R.	Age	B.M.R.	Age	B.M.R.	Age	B.M.R.
70	-12 3	53	+12 0	44	-32 1	37	+ 3 4
67	-21 8	53	+ 6 6	44	-11 8	37	- 2 2
66	- 5 9	50	-15 5	43	-24 2	36	- 1 9
64	- 1 6	50	- 7 8	43	- 8 2	35	+ 5 0
62	-11 1	48	- 1 9	42	-12 5	35	- 1 6
61	-36 9	48	- 5 1	42	-11 5	35	-18 2
60	-31 4	47	+ 8 5	42	-19 3	34	- 7 5
60	- 1 9	47	-44 2	41	- 9 8	34	- 3 5
60	+ 2 8	47	-14 0	41	-30 5	33	- 8 6
58	-20 3	46	+ 0 9	41	-30 7	33	-22 9
57	-13 2	45	-24 5	41	-19 1	33	-18 0
56	-13 1	45	+11 4	41	-33 8	32	-16 3
55	-27 5	45	-30 0	40	-24 5	30	+14 1
55	-17 2	45	- 5 1	40	-17 1	26	-13 4
53	-12 6	44	-22 2	40	-20 3		
53	- 3 6	44	-40 8	40	- 4 7		
53	+ 8 1	44	- 7 0	38	-30 6		

Age groups	Per cent of cases	Average B.M.R.
70 to 61	9 23	-14 93 +none
60 to 51	20 00	-15 53 + 7 37
50 to 41	41 53	-19 23 + 6 93
40 to 26	29 23	-13 98 + 6 02

basal metabolism in arteriosclerotic and senile psychoses is primary or secondary must be left open

In organic psychoses with known underlying causal factors as in dementia paralytica, and acute alcoholic psychoses,

TABLE XXIV

Basal metabolic rate in relation to blood pressure in dementia paralytica before treatment

Bl pr	B.M.R.	Bl pr	B.M.R.	Bl pr	B.M.R.
190/110	-1 9	135/80	-19 3	115/70	-30 6
180/80	+0 9	135/65	+14 1	115/85	-20 3
180/100	-17 2	135/85	-22 9	110/70	+1 6
188/100	-12 3	135/85	+2 8	110/70	+5 0
170/90	-31 4	134/76	+3 4	110/60	-33 8
160/80	-13 1	134/76	+12 0	110/50	-16 3
160/90	-27 5	132/78	-17 0	110/60	-9 8
155/70	-11 1	130/90	-5 1	110/70	-30 5
150/80	-3 6	130/80	-7 0	108/78	-3 5
150/95	+8 1	130/80	-40 8	106/68	-18 2
150/90	-30 0	130/70	-5 1	106/70	-22 2
150/90	-24 5	126/76	-19 1	105/78	-11 8
150/80	-30 7	125/75	-4 7	102/70	-20 3
150/72	-21 8	124/82	-8 2	100/50	+6 6
148/85	-36 9	122/74	-5 9	100/68	-1 9
146/70	-24 5	120/70	-13 4	100/70	-12 5
140/80	-13 2	120/70	-8 6	100/70	-12 6
140/70	-44 2	120/78	-7 5	98/50	+8 5
140/80	-1 9	120/70	-24 2	98/58	-18 0
140/56	-1 6	120/80	-14 0	95/75	-15 5
135/80	-7 8	118/60	-32 1	90/60	-2 2
135/90	+11 4	115/70	-11 5		

Bl pr syst	Per cent of cases	Average B.M.R.
190 to 151	12 30	-16 35
		+0 9
150 to 131	32 30	-19 99
		+8 63
130 to 121	12 30	-10 76
		+none
120 to 90	43 07	-16 30
		+5 42

TABLE XXV

Basal metabolic rate in treated cases of dementia paralytica (106 cases)

1	-35 3	28	-13 2	55	-5 8	82	+2 4
2	-27 3	29	-13 2	56	-5 8	83	+2 5
3	-25 9	30	-12 5	57	-5 5	84	+2 5
4	-25 7	31	-12 3	58	-5 0	85	+2 7
5	-24 5	32	-12 0	59	-4 7	86	+3 1
6	-23 3	33	-12 0	60	-4 4	87	+3 2
7	-23 1	34	-11 8	61	-4 4	88	+3 5
8	-23 0	35	-11 5	62	-3 8	89	+3 7
9	-22 2	36	-11 1	63	-3 6	90	+4 0
10	-21 8	37	-10 2	64	-3 5	91	+4 7
11	-20 6	38	-10 0	65	-3 1	92	+4 8
12	-20 4	39	-10 0	66	-2 6	93	+4 9
13	-20 0	40	-9 8	67	-2 2	94	+5 1
14	-19 1	41	-9 7	68	-1 3	95	+5 3
15	-19 1	42	-9 5	69	-0 1	96	+5 3
16	-19 0	43	-9 3	70	-0 1	97	+6 9
17	-19 0	44	-9 2	71	-0 1	98	+7 5
18	-18 7	45	-8 0	72	+0 1	99	+7 8
19	-18 4	46	-8 0	73	+0 1	100	+8 7
20	-18 3	47	-7 6	74	+0 4	101	+10 5
21	-16 5	48	-7 5	75	+0 4	102	+10 6
22	-16 4	49	-7 2	76	+0 8	103	+12 2
23	-15 8	50	-7 2	77	+1 4	104	+17 3
24	-15 1	51	-6 6	78	+1 4	105	+18 1
25	-13 6	52	-6 4	79	+1 6	106	+19 0
26	-13 5	53	-6 2	80	+1 9		
27	-13 3	54	-6 2	81	+2 2		

Cerebral type	80 19%
Tubercular type	19 81%
Male sex	83 02%
Female sex	16 98%
Minus readings	66 99%
Plus readings	33 01%
Above +10 per cent	3 77%
Between +10% and -10%	62 26%
Below -10 per cent	34 07%

TABLE XXVI

Basal metabolic rate in relation to age in treated cases of dementia paralytica

Age	B.M.R.	Age	B.M.R.	Age	B.M.R.	Age	B.M.R.
71	-9 5	55	+18 1	49	-13 5	42	-23 1
69	-4 0	54	-8 0	49	+2 2	42	-15 1
68	+5 1	54	+5 3	49	-4 4	42	+1 4
68	+0 1	54	+0 4	48	-12 5	41	+7 8
64	+10 6	54	-20 4	48	-35 3	41	-24 5
64	+6 9	53	-2 6	47	-7 2	41	+0 8
64	-25 7	53	-13 2	47	-6 6	41	+2 5
63	-5 8	52	-18 3	47	+19 0	40	-13 6
63	+7 5	52	+1 4	46	-6 2	40	-18 4
63	-19 0	52	-3 8	46	+0 4	40	+2 5
62	+1 9	52	+4 7	46	-12 0	40	-9 8
60	-10 2	52	-19 1	46	-13 3	40	-4 7
59	-19 0	52	-27 3	46	+5 3	39	-11 5
58	+2 4	51	+12 2	46	+3 1	39	-25 9
58	-12 3	51	-13 2	46	-3 6	39	-23 3
58	-2 7	51	-1 3	45	+4 8	37	-3 5
58	+17 3	51	-12 0	45	-7 2	36	+8 7
56	+0 1	51	-9 3	45	-16 5	35	-21 8
56	+4 9	50	-11 8	45	-23 0	35	-5 8
56	+2 7	50	-0 1	45	-3 5	35	-5 0
56	-7 5	50	-19 1	45	-18 7	34	-8 0
55	-6 4	50	-10 0	45	-15 8	34	-6 2
55	-22 2	50	-20 6	44	+3 2	34	+3 7
55	-7 6	50	-4 4	44	-11 1	31	+10 5
55	-20 0	50	-0 1	44	-3 1	16	-10 0
55	-9 2	50	-9 7	42	+1 6		
55	-13 6	49	-5 5	42	-16 4		

Age groups	Per cent of cases	Average B.M.R.
71 to 61	10 37	-12 8
		+5 35
60 to 51	32 07	-10 87
		+4 55
50 to 41	40 56	-10 13
		+4 45
40 to 16	16 98	-11 54
		+6 35

TABLE XXVII

Basal metabolic rate in relation to blood pressure in treated cases of dementia paralytica

Bl pr	B.M.R.	Bl pr	B.M.R.	Bl pr	B.M.R.
256/120	-4 4	135/88	-6 4	115/80	+4 7
196/140	-7 6	132/84	-27 5	114/76	+1 9
190/108	+0 1	130/100	-3 1	114/76	-1 3
180/105	+12 2	130/80	-2 2	114/70	+10 5
180/78	-20 0	130/72	-13 6	112/64	-23 3
170/64	+18 1	130/70	-22 2	112/74	-23 1
170/90	+4 9	128/80	+7 8	110/80	-2 6
170/110	-9 2	126/86	+4 8	110/80	+19 0
170/105	+6 9	125/85	-12 3	110/65	-27 3
170/110	-5 8	125/85	-18 4	110/80	-25 7
166/100	-11 1	125/78	-5 8	110/70	-22 2
162/80	-18 3	124/88	-25 9	110/78	-0 1
160/115	+0 1	124/78	-4 4	110/70	-20 6
160/95	+1 6	124/78	-9 3	110/80	+17 3
156/98	-7 2	124/72	-11 5	110/70	-7 2
156/112	+8 7	120/95	+1 4	110/75	-3 5
150/100	-8 0	120/80	-11 8	108/60	-10 0
150/80	-6 6	120/75	-12 0	108/76	+0 4
150/105	-10 0	120/58	-9 8	108/75	+5 3
150/78	-0 1	120/70	-12 5	108/90	-3 5
148/96	-5 5	120/95	-23 0	106/70	-6 2
146/84	-10 2	120/85	-19 0	105/65	+0 4
146/82	-3 6	120/80	-12 0	104/70	-13 3
146/70	-13 2	120/85	-7 5	100/50	-5 0
144/96	-4 0	118/68	-15 8	100/50	-35 3
144/106	+2 4	118/68	-19 0	100/60	-16 4
144/88	-6 2	118/86	+2 2	100/75	-13 6
142/88	+2 7	118/78	-16 5	100/50	+5 1
140/96	+5 3	116/66	+10 6	100/75	+1 4
140/80	-4 7	116/64	+2 5	98/60	+0 8
140/76	+3 7	116/84	-19 1	90/70	+3 2
138/96	-13 5	115/80	-8 0	80/48	+3 1
138/100	-3 8	115/60	-9 7	80/60	-19 1
138/88	-21 8	115/70	-20 4	70/50	-15 1
136/74	-9 5	115/75	-18 7		
135/95	-13 2	115/65	+2 5		

Bl pr syst	Per cent of cases	Average B.M.R.
256 to 171	4 71	-10 66
		+6 15
170 to 151	10 37	-10 30
		+4 65
150 to 131	20 07	-8 63
		+3 10
130 to 121	12 26	-13 21
		+3 10
120 to 70	51 88	-11 58

the lowered basal metabolism seems to be secondary to the tissue changes

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TABLE XXVIII

Basal metabolic rate in treated male cases of dementia paralytica (88 cases)

1	-35	3	23	-13	6	45	-5	8	67
2	-27	3	24	-13	5	46	-5	0	68
3	-25	7	25	-13	3	47	-4	7	69
4	-24	5	26	-13	2	48	-4	4	70
5	-23	3	27	-13	2	49	-4	4	71
6	-23	1	28	-12	5	50	-3	8	72
7	-23	0	29	-12	0	51	-3	6	73
8	-22	2	30	-12	0	52	-3	5	74
9	-20	6	31	-10	2	53	-3	1	75
10	-20	4	32	-10	0	54	-2	6	76
11	-20	0	33	-10	0	55	-2	2	77
12	-19	1	34	-9	8	56	-1	3	78
13	-19	1	35	-9	7	57	-0	1	79
14	-19	0	36	-9	5	58	-0	1	80
15	-19	0	37	-9	3	59	+0	1	81
16	-18	7	38	-9	2	60	+0	1	82
17	-18	4	39	-8	0	61	+0	4	83
18	-18	3	40	-7	6	62	+0	4	84
19	-16	5	41	-7	5	63	+0	8	85
20	-16	4	42	-7	2	64	+1	4	86
21	-15	8	43	-6	6	65	+1	4	87
22	-15	1	44	-5	8	66	+1	9	88

Cerebral type	78 41%
Tabetic type	21 59%
Minus readings	61 34%
Plus readings	34 09%
Above +10 per cent	4 54%
Between +10 per cent and -10%	61 36%
Below -10 per cent	34 09%

TABLE XXIX

Basal metabolic rate in relation to age in treated male cases of dementia paralytica

Age	B M R	Age	B M R	Age	B M R	Age	B M R
71	-9	55	-9	2	50	-20	6
69	-4	0	55	-13	6	50	-4
68	+5	1	55	+18	1	50	-0
68	+0	1	54	-8	0	50	-9
64	+10	6	54	+5	3	49	-13
64	+6	9	54	+0	4	49	+2
64	-25	7	54	-20	4	49	-4
63	-5	8	53	-2	6	48	-12
63	+7	5	53	-13	2	48	-35
63	-19	0	52	-18	3	47	-6
62	+1	9	52	+1	4	47	+19
60	-10	2	52	-3	8	46	+0
59	-19	0	52	+4	7	46	-12
58	-2	2	52	-19	1	46	-13
58	+17	3	52	-27	3	46	+5
56	+0	1	51	+12	2	46	+3
56	+4	9	51	-13	2	46	-7
56	+2	7	51	-1	3	45	-7
56	-7	5	51	-12	0	45	-16
55	-22	2	51	-9	3	45	-23
55	-7	6	50	-19	1	45	-3
55	-20	0	50	-10	0	45	-18

Age groups	Per cent of cases	Average B M R.
71 to 61	12 5	-12 8
		+5 35
60 to 51	35 22	-12 40
		+6 71
50 to 41	37 50	-13 28
		+4 55
40 to 16	14 77	-10 41
		+6 35

TABLE XXX

Basal metabolic rate in relation to blood pressure in treated male cases of dementia paralytica

Bl pr	B M R	Bl pr	B M R	Bl pr	B M R
256/120	-4	130/72	-13	6	112/64
196/140	-7	130/70	-22	2	112/74
190/108	+0	130/80	-2	2	110/80
180/105	+12	125/85	-18	4	110/80
180/78	-20	125/78	-5	8	110/65
170/64	+18	124/78	-4	4	110/80
170/90	+4	124/78	-9	3	110/70
170/110	-9	120/95	+1	4	110/78
170/105	+6	120/75	-12	0	110/70
170/110	-5	120/58	-9	8	110/80
162/80	-18	120/70	-12	5	110/70
160/115	+0	120/95	-23	0	110/75
156/112	+8	120/85	-19	0	108/60
150/100	-8	120/80	-12	0	108/76
150/80	-6	120/85	-7	5	108/76
150/105	-10	118/68	-15	8	108/90
146/82	-3	118/68	-19	0	105/65
146/70	-13	118/86	+2	2	104/70
146/84	-10	118/78	-16	5	100/50
144/96	-4	116/66	+10	6	100/50
142/88	+2	116/64	+2	5	100/60
140/96	+5	116/84	-19	1	100/75
140/76	+3	115/60	-9	7	100/50
140/80	-4	115/70	-20	4	100/75
138/96	-13	115/75	-18	7	98/60
138/100	-3	115/65	+2	5	80/48
136/74	-9	115/80	+4	7	80/60
135/95	-13	114/76	+1	9	70/50
132/84	-27	114/76	-1	3	
130/100	-3	114/70	+10	5	

Bl pr syst	Per cent of cases	Average B M R
256 to 171	5 68	-10 66
		+6 15
170 to 151	9 09	-11 1
		+7 71
150 to 131	18 18	-9 27
		+3 9
130 to 121	9 09	+9 87
		+none
120 to 10	57 95	-14 5
		+5 24

TABLE XXXI

Basal metabolic rate in treated female cases of dementia paralytica (18 cases)

1	-25	9	6	-11	1	11	-6	2	16	+3	2
2	-21	8	7	-8	0	12	-5	5	17	+4	8
3	-12	3	8	-7	2	13	-0	1	18	+1	8
4	-11	8	9	-6	4	14	+1	6			
5	-11	5	10	-6	2	15	+2	4			

Cerebral type	88 89%
Tabetic type	11 11%
Minus readings	75 00%
Plus readings	25 00%
Above +10 per cent	0 0%
Between +10% and -10%	66 00%
Below -10 per cent	34 00%

TABLE XXXII

Basal metabolic rate in relation to age in treated female cases of dementia paralytica

Age	B M R.	Age	B M R.	Age	B M R.	Age	B M R.
58	+2	4	49	-5	5	44	-11
58	-12	3	47	-7	2	42	+1
55	-6	4	46	-6	2	41	+7
50	-11	8	45	+4	8	39	-11
50	-0	1	44	+3	2		

Age groups	Per cent of cases	Average B M R.
58 to 51	16 66	-9 35
		+2 40
50 to 41	55 55	-6 98
		+4 35
40 to 34	27 77	-12 68
		+none

TABLE XXXIII

Basal metabolic rate in relation to blood pressure in treated female cases of dementia paralytica

Bl pr	B M R	Bl pr	B M R	Bl pr	B M R
166/100	-11 1	144/88	-6 2	124/88	-25 9
160/95	+1 6	138/88	-21 8	124/72	-11 5
156/98	-7 2	134/88	-6 4	120/80	-11 8
150/78	-0 1	128/80	+7 8	115/80	-8 0
148/96	-5 5	126/86	+4 8	106/70	-6 2
144/106	+2 4	125/85	-12 3	90/70	-3 2

Bl pr syst	Per cent of cases	Average B M R
166 to 151	22 22	-9 5
		+1 6
150 to 131	27 77	-8 0
		+2 4
130 to 121	33 33	-16 56
		+6 3
120 to 90	16 66	-8 66
		+3 2

TABLE XXXIV

Basal metabolic rate in labetic type of dementia paralytica (21 cases)

1	-20 0	7	-10 0	12	-3 6	17	+1 6
2	-19 1	8	-8 0	13	-3 1	18	+7 5
3	-19 1	9	-7 2	14	+0 1	19	+8 7
4	-18 3	10	-6 2	15	+1 4	20	+17 3
5	-12 0	11	-4 4	16	+1 4	21	+18 1
6	-10 2						

Minus readings	61 90%
Plus readings	38 10%
Above +10 per cent	9 52%
Between +10% and -10%	66 66%
Below -10 per cent	28 80%

TABLE XXXV

Basal metabolic rate in alcoholic psychoses (48 cases)

1	-32 5	13	-14 3	25	-8 7	37	-0 4
2	-38 4	14	-13 8	26	-6 9	38	+3 1
3	-36 3	15	-13 6	27	-6 6	39	+3 1
4	-33 8	16	-13 0	28	-5 2	40	+4 8
5	-22 5	17	-12 8	29	-4 9	41	+5 1
6	-21 0	18	-12 6	30	-4 8	42	+9 1
7	-20 0	19	-12 5	31	-3 1	43	+11 2
8	-20 0	20	-12 0	32	-3 1	44	+11 7
9	-19 9	21	-12 0	33	-2 5	45	+12 9
10	-19 3	22	-11 4	34	-1 3	46	+18 2
11	-18 4	23	-10 8	35	-1 1	47	+22 8
12	-14 5	24	-9 2	36	-1 1	48	+24 8

Male sex	89 59%
Female sex	10 41%
Minus readings	75 00%
Plus readings	25 00%
Above +10 per cent	12 50%
Between +10% and -10%	41 66%
Below -10 per cent	45 82%

TABLE XXXVI

Basal metabolic rate in relation to age in alcoholic psychoses

Age	B M R	Age	B M R	Age	B M R	Age	B M R
67	-33 8	56	-10 8	50	-12 8	42	-1 3
66	-12 5	56	-5 2	49	+3 0	41	-22 5
65	-11 4	56	-3 1	49	-52 5	41	-2 5
64	-6 6	55	-3 1	49	-19 9	40	-4 9
63	-6 9	55	-36 3	48	-4 8	36	-38 4
62	-21 0	55	-13 0	47	-1 1	35	-12 0
61	+22 8	54	+5 1	47	-12 6	35	-15 8
60	-12 0	54	+11 2	47	+24 8	35	+11 7
59	-1 1	52	-14 5	46	-20 0	31	+3 1
58	-8 7	52	+12 9	46	+9 1	26	-19 3
57	-14 3	51	-18 4	46	+18 2	21	-9 2
56	-20 2	51	+4 8	44	+0 4		

Age groups	Per cent of cases	Average B M R
67 to 61	14 58	-15 2
		+22 8
60 to 51	37 50	-12 45
		+8 5
50 to 41	31 25	-15 00
		+11 10
40 to 21	16 16	-16 26
		+7 4

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Discussion

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 —Dr Notkin has presented us with a most unusual group of data on the basal metabolism in various organic psychoses. It is well-known from the work of Lusk, DuBois, and Benedict that basal metabolism varies considerably according to age, sex, health or disease, the effects of drugs and diet, and the effects of emotional disturbance. Benedict¹ showed that emotional disturbance caused a marked increase in the metabolism of a normal human subject which

TABLE XXXVII

Basal metabolic rate in relation to blood pressure in alcoholic psychoses

Bl pr	B M R	Bl pr	B M R	Bl pr	B M R
216/110	-11 4	138/86	+22 8	118/78	+24 8
170/110	+11 2	138/82	-13 6	118/78	+0 4
170/110	-6 6	135/98	+4 8	115/60	-12 8
170/90	-21 0	135/75	-3 1	114/82	-22 5
170/110	+9 1	134 70	-8 7	112/68	-10 8
165/105	-13 0	130 0	-12 0	110/60	-5 2
160/70	-6 9	130/80	-18 4	110/70	-12 0
160/82	-20 0	130/70	-9 2	110/75	+5 1
160/70	-52 5	128 74	-2 5	108/74	+3 1
150/90	-1 1	125 70	-19 3	107/76	-1 3
150/100	-14 5	124/90	-38 4	107/71	-13 8
150/80	-1 1	120/70	-12 5	105/65	-14 3
150/80	-12 6	120/70	-4 9	98 60	-19 9
145/80	+3 0	120/60	-3 1	98/68	+18 2
140 60	-33 8	120 76	-4 8	85/70	+11 7
140 60	+12 9	118/60	-20 2	80/50	-36 3

Bl pr syst	Per cent of cases	Average B M R
216 to 151	56 24	-14 00
		+10 53
150 to 131	25 00	-11 06
		+10 87
130 to 80	18 75	-18 77
		+10 15

TABLE XXXVIII

Basal metabolic rate in various types of alcoholic psychoses

1 Confusional types	
Per cent of cases	37 08
Average B M R	-12 88
	+8 15
2 Chronic types (Deterioration and Paranoïd)	
Per cent of cases	22 91
Average B M R	-10 96
	+12 32
3 Korsakow type	
Per cent of cases	14 58
Average B M R	-12 88
	+8 15
4 Acute hallucinosis	
Per cent of cases	14 58
Average B M R	-15 86
	+11 50

did not subside for several days. Pioneer work by Magnus-Levy and Falk in 1899 clearly indicated that advancing age is accompanied by a decreased basal metabolism.

As you all know, the commoner conditions associated with increase in the basal metabolism are (1) thyrotoxicosis, (2) leukemias (with increased nitrogen catabolism), (3) polycythemia, (4) some cases of hyperpituitarism in the active stage, (5) heart failure associated with dyspnea and overwork of the respiratory muscles, (6) fever, (7) pregnancy in the last few weeks, and (8) emotional disturbances.

TABLE XXXIX

Basal metabolic rate in miscellaneous chronic and acute organic psychoses

1. *Traumatic psychoses*

1	- 9 7	4	-25 3
2	-12 5	5	-41 6
3	-29 6	6	-47 6

2. *Psychoses with various organic brain and cord changes*

1	+ 9 4	Parkinson's disease (paralysis agitans)
2	+ 0 8	Parkinson's disease (paralysis agitans)
3	+47 0	Huntington's chorea
4	-12 0	Wilson's disease
5	+12 0	Wilson's disease
6	-17 0	Pick's disease
7	- 8 3	Charcot-Marie-Tooth
8	-26 0	Charcot-Marie-Tooth

3. *Psychoses with metabolic disease*

1	+ 2 1	Osteitis Cystica Fibrosa
2	+ 5 0	Paget's disease (osteitis deformans)
3	-37 9	Pernicious Anemia with combined sclerosis
4	- 4 2	Pernicious Anemia with combined sclerosis
5	- 7 4	Pernicious Anemia with combined sclerosis
6	- 7 1	Diabetes Mellitus

4. *Psychoses due to drugs and other poisons*

1	-23 6	Veronal
2	-29 1	CO (illuminating gas)

5. *Psychoses due to somatic disease*

1	-10 2	Cardiac Decompensation
2	-12 0	Empyema
3	-28 3	Empyema
4	+16 3	Lobar pneumonia
5	-18 6	Lobar pneumonia

Certain medicaments also increase the

basal metabolism these are (1) thyroid gland by mouth or thyroxine by vein, (2) certain nitrophenols, and (3) 3,5-diiodo-L-thyronine. Caffeine and adrenaline stimulate metabolism but have little or no effect on the B.M.R. because their action is not apparent fourteen hours after injection—when the B.M.R. is taken.

The commoner conditions associated with decrease in the basal metabolism of the individual are (1) hypothyroidism (including myxedema and cretinism), (2) under-nutrition, and (3) nephritis with edema. Some drugs lower the basal metabolic rate, these are (1) iodine, (2) sodium or ammonium fluoride by mouth or intravenously, and (3) morphine.

Steinberg² has shown in normal people that increase in mental speed is not related to increase in the basal metabolism—and this one might expect considering the small amount of energy expended in mental activity.

Dr Notkin has shown us that in organic disease of the brain there is a general depression of the body metabolism. He has given us indisputable proof, in the organic psychoses, that the depression of body metabolism is dependent upon depression of brain function. We should add to this our knowledge that emotional upsets can increase basal metabolism.

Changes in the brain, the body (the endocrines, etc.) and the environment can produce changes in the activity of the organism. Dr Notkin has shown us how important the central structural control of metabolism is. Let me congratulate him on a most valuable contribution to our neuropsychiatric knowledge.

References

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ANTIVENIN SERUM

Painful as it may be to some to have this knowledge divulged publicly, spirituous liquors are not the best antidote for snake bite. The chief service of the remedy is to render the snake-bite person more or less indifferent to his predicament, or enthusiastic perhaps, about being bitten again, according to Dr Lee D. Cady, author of "Snakes in the Service of Science" in *Hygeia*.

The antivenin serum injection of the proper sort is by far the better for the saving of life or amelioration of symptoms.

Of course it has been known for many years that if one had the good fortune to survive the first bite, one has a much better chance to live after the second poisoning

from another snake of the same species. This may be comforting knowledge, but the hard-bitten professionals do not have their favorite rattlesnake give them an eye opener of venom every morning.

Venomous snake secretions have, in the main, three poisonous elements in them. These vary markedly with the species of the snake, and the kind of antivenin to be used in a snake accident must fit the case. The colubrine snake venoms possess a predominantly neurotoxic action, that is, they are poisonous to the nervous system.

The venom of the daboia (*Viper Russellii*) and the Bungarus have an interesting ability to cause blood to clot very quickly, even while circulating.

SURGICAL TREATMENT OF ACUTE CHOLECYSTITIS

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In discussing the surgical treatment of acute cholecystitis, I do not propose sweepingly to condemn older and more conservative methods of treatment and solely to advocate more radical methods. Rather I propose to present the results of my efforts to lower the mortality in this disease and to recount the data relevant to the subject which I have gathered from the literature. By so doing, I shall hope to convince you that a too conservative attitude toward the treatment of acute cholecystitis has contributed to its mortality and should be replaced by a more elastic viewpoint which recognizes the necessity of resorting to surgical treatment in the acute stage of the disease.

By the conservative attitude, I refer to the still widely-accepted opinion that the welfare of the patient with acute cholecystitis is best conserved by waiting for the acute process to subside and to operate, if operation is contemplated, after the disappearance of the acute symptoms. It is based chiefly upon two suppositions (1) that the acutely inflamed viscus generally takes care of itself and that, therefore, complications as gangrene of the gall-bladder, perforation, peritonitis, and extracholecystic abdominal abscess are rare and (2) that the danger to the patient in operating during the acute stage of the inflammatory process is definitely greater than in an interval when the inflammatory process has subsided.

Those of you whose experience goes back some years will recall similar expressions with reference to acute appendicitis. At one period in the development of its treatment, it commonly was stated that the dangers of operating in the acute stage of the disease were greater than those of gangrene and perforation of the appendix, and it was the practice of many to await an "interval" before its removal. While I do not wish to emphasize too strongly the similarities between acute appendicitis and acute cholecystitis, certain analogies do exist, and

it may not be inappropriate to discuss with reference to acute cholecystitis, the propositions which at a previous period were discussed with reference to acute appendicitis. These are three

1 Is it possible, from the clinical symptoms in acute cholecystitis, to determine the pathological course of the inflammatory process in the gall-bladder—whether this is toward restitution or toward gangrene and perforation?

2 Is it true that the acutely inflamed gall-bladder so rarely undergoes gangrene and perforation as to disregard these complications as important factors in the treatment of the disease?

3 Is the danger to the patient of operating in the acute stage of the disease before gangrene and perforation have occurred greater than the dangers of gangrene and perforation, the result of a waiting policy?

These propositions I shall discuss in the order named

1 In a series of eighty-nine cases of acute cholecystitis at the Cincinnati General Hospital which I studied and briefly reported in 1930¹ and which subsequently were more carefully studied and reported by Zininger,² it was found that (a) thirty-five cases were so ill at the time of admission that immediate operation was performed. The later comparison of the clinical symptoms with the pathological findings in the gall-bladder in these thirty-five cases seemed to show a relationship between a high leukocyte count and empyema of the gall-bladder and a relationship between the duration of the attack and the extent and severity of the inflammatory process in the gall-bladder. But, aside from these two inconstant relationships, there appeared to be no definite relationship between the symptoms and the pathological process. (b) Fifty-four cases were kept under observation from one to twelve days and in the majority of cases because the symptoms and physical signs were mild and warranted the opinion that the disease would subside. In twenty of the fifty-four cases, or 37 per cent the attacks subsided, in nineteen, or thirty-five per cent of the cases the attacks failed to subside after an interval of

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twelve days and operation was deemed necessary, in fifteen, or 277 per cent, the attacks became progressively more severe, and in four perforation of the gall-bladder occurred. Of the fifty-four cases with mild symptoms on admission, twenty or thirty-seven per cent showed a resolution of the pathological process in the gall-bladder, while thirty-four or sixty-three per cent showed progress of the disease to empyema of the gall-bladder (12), to gangrene (2), and to gangrene and perforation (6), and often in the presence of mild symptoms.

In a second series of 126 cases of acute cholecystitis admitted to the surgical wards of the New York Hospital, the lack of a definite relationship between the clinical symptoms and pathological findings is also apparent. It is true that the studies made in this series of cases were not so prolonged as in the Cincinnati series. I find that of the 126 cases about seventy per cent were subjected to operation less than twenty-four hours after admission, while thirty per cent were observed forty-eight hours or more before operation was performed. Nevertheless, I have sufficient evidence to show that the severity and course of the clinical manifestations of the disease bear no constant relationship to the severity and course of the pathological process in the gall-bladder.

In a group of twenty-one cases in which the gall-bladder at operation showed a subacute or resolving inflammatory process, the average temperature was 3°C above normal, the average leukocyte count 10,400 and the gall-bladder was enlarged and palpable in twenty-eight per cent of the cases (Temperature normal— 37°C —or subnormal in nine, 37 to 37.4 in seven, 37.4 to 38 in five. Leukocytes normal—7500—or subnormal in three, 7500 to 9000 in seven, 9000 to 15,000 in nine, above 15,000 in two. Gall-bladder palpable in six of twenty-one cases or twenty-eight per cent.)

In a group of seventy-two cases in which the gall-bladder at operation showed an acute inflammation without evidence of regression the average temperature was 3°C above normal, the average leukocyte count was 11,500, and the gall-bladder was palpable in forty-seven per cent of the cases (Temperature normal or subnormal in thirty-nine, 37 to 37.4 in twelve, 37.4 to 38 in fifteen, and above 38 in six. Leukocytes were normal or subnormal in eight, 7500 to 9000 in eleven, 9000 to 15,000 in seven. Gall-bladder palpable in thirty-four, or forty-seven per cent.)

In a group of nineteen cases in which the gall-bladder at operation showed definite areas of gangrene but no evidence of per-

foration the average temperature was 8°C above normal, the average leukocyte count 13,400, and gall-bladder was palpable in sixty-eight per cent of the cases (Temperatures normal or subnormal in six, from 37 to 37.4 in two, 37.4 to 38 in seven, and above 38 in four. Leukocytes were normal or subnormal in one, 7500 to 9000 in one, 9000 to 15,000 in eleven, and above 15,000 in six. The gall-bladder palpable in thirteen, or sixty-eight per cent.)

In a final group of fourteen cases in which the gall-bladder at operation showed gangrene and undoubted perforation with pericholecystic abscess (12) and general peritonitis (2) the average temperature was 7°C above normal, average leukocyte count was 14,100, and gall-bladder was palpable in seventy per cent of the cases (Temperatures normal or subnormal in two, from 37 to 37.4 in four, from 37.4 to 38 in five, above 38 in three. Leukocytes were normal or subnormal in none, 7500 to 9000 in two, 9000 to 15,000 in seven, and over 15,000 in five. Gall-bladder palpable in ten, or seventy per cent.)

Summarizing the series of 126 cases it may be said that the symptoms and physical signs varied greatly and of themselves often failed to give any definite information regarding the pathological process in the gall-bladder. A study of the temperatures, leukocytes, and size of the gall-bladder shows that in general there is a distinction which may be drawn between the cases of acute and subacute cholecystitis on the one hand and the cases of gangrene and gangrene with perforation on the other, and that this distinction lies in the higher temperatures, higher leukocyte counts, and higher percentage of palpable gall-bladders in the latter groups of cases. But in this series of cases there is little distinction clinically between the acute progressive and the subacute or subsiding cholecystitis and between the gangrenous and the gangrenous with perforation. It is, I think, worthy of note that in the 126 cases, thirty-three or twenty-six per cent showed gangrene of the gall-bladder and fourteen of these, or eleven per cent of the entire series showed perforation of the gall-bladder.

This has been my experience with 215 cases of acute cholecystitis. From the literature I might select a number of contributions to the subject, the authors of which have had an experience not unlike my own. For lack of time I quote but one and I select the contribution of Tourouff¹⁵ of the Mt Sinai Hospital. He studied pathologically the gall-bladders removed from seventy-five patients in whom at the time of operation the clinical symptoms and physical

signs were subsiding or minimal or had completely disappeared, and with the purpose of determining whether the pathological process in the gall-bladder corresponded with the clinical symptoms. In twenty-three of the seventy-five cases, the clinical symptoms were extremely mild at the time of operation and of these four or seventeen per cent had simple acute cholecystitis while eighteen or eighty per cent had more serious acute lesions of the gall-bladder. These included ten instances of gangrene, four of perforation, and five of pericholecystic abscess. In fifty-two of the seventy-five cases, the clinical symptoms had completely subsided prior to operation and of these twenty-nine, or fifty-six per cent, had simple acute cholecystitis and twenty-three or forty-four per cent had more serious acute lesions including empyema, gangrene, and perforation.

Such observations as I have related suggest the answer to my first proposition, namely, that in acute cholecystitis it often is not possible from the clinical symptoms and physical signs to determine the pathological course of the inflammatory process in the gall-bladder. The situation is somewhat similar to that in acute appendicitis, it differs from it largely in that the incidence of gangrene and perforation of the gall-bladder is not so high as the incidence of gangrene and perforation of the appendix, but that the incidence of these complications in acute cholecystitis is sufficiently high not to justify a surgical attitude toward the disease the reverse of that in acute appendicitis I shall hope to show later.

2 The second proposition has to do with the frequency of gangrene, perforation, and other serious complications which may develop in the course of the conservative treatment of acute cholecystitis and their importance as factors contributing to its mortality. No one denies that these complications occur, but the opinion is widespread that their occurrence is so rare that the mortality attending them is less than the mortality from operations performed in the acute stage of the disease. It is no doubt true that the experience of surgeons and surgical clinics varies considerably with respect to the incidence of gangrene and perforation of the gall-bladder in acute cholecystitis, that the incidence is always low is not the universal experience.

In my series of cases in Cincinnati, I found that among 150 cases of cholecystitis and cholelithiasis observed between 1925 and 1930, eighty-nine, or approximately fifty-nine per cent had acute cholecystitis and of these eighteen had at operation gangrene and per-

foration of the gall-bladder. This number of cases of gangrene and perforation represents twelve per cent of the total number of admissions for diseases of the gall-bladder and twenty per cent of acute cholecystitis. In my experience in the New York Hospital the past three and one-half years, I find that among 497 patients admitted with diseases of the gall-bladder, 126 had acute cholecystitis and of these thirty-three had gangrene or gangrene and perforation of the gall-bladder. This number of cases of gangrene and gangrene and perforation represents 66 per cent of the total number of admissions for disease of the gall-bladder, and twenty-six per cent of the cases of acute cholecystitis.

In the records of the Old New York Hospital between 1922 and 1932, I find eight hundred cases of disease of the gall-bladder of which 106 were certainly cases of acute cholecystitis and of which sixteen certainly and seven additional probably were cases of perforation of the gall-bladder. This number of cases of perforation represents 29 per cent of the total number of cases and twenty-one per cent of the cases of acute cholecystitis.

The studies of Eliason and McLaughlin,³ the experience of Gosset,⁴ Fifield,⁵ Fischer and Mensing,⁶ McWilliams,⁷ Alexander,⁸ Mitchell,⁹ Niemaier,¹⁰ Blalock,¹¹ Smith,¹² and others show that the incidence of gangrene and perforation in disease of the gall-bladder treated according to accepted methods is from two to three per cent. This seems an insignificant number in the practice of the individual physician or surgeon but when considered from the viewpoint of the very large number of individuals throughout the country treated for diseases of the gall-bladder, it is worthy of note.

More important, however, because it concerns particularly the subject we are discussing, is the frequency of gangrene and perforation of the gall-bladder in acute cholecystitis. In my studies of three series of cases (Cincinnati, Old New York Hospital, and New York Hospital) including about 320 cases of acute cholecystitis, the incidence of gangrene and perforation was twenty, twenty-one, and twenty-six per cent respectively. In the experience of Judd and Phillips,¹³ it was 134 per cent, Zininger,² 205 per cent, Morris Smith,¹² 224 per cent. These and similar statistical data present in the literature indicate that gangrene and perforation of the gall-bladder may be expected to occur in approximately twenty per cent of the cases of acute cholecystitis not promptly treated by surgery. It is a figure higher, I think, than is generally appreciated.

Not only does the inflammatory process in acute cholecystitis lead to gangrene and perforation of the gall-bladder under conservative treatment, but the mortality from these complications is high. In the Cincinnati series, the mortality following perforation of the gall-bladder was 187 per cent, in 800 cases in the Old New York Hospital it was 347 per cent, in the present series it was 153 per cent. A study of recent literature shows that in the experience of fourteen authors covering over 500 cases of perforation, the mortality varied between fifteen and sixty-five per cent and averaged forty-six per cent. Eliason and McLaughlin⁸ in a study of 555 cases of perforation, find a mortality which varied between eleven and fifty-eight per cent, but averages 47.6 per cent. This mortality, I find from a study of 35,000 cases of non-cancerous disease of the gall-bladder and biliary tract, represents ten per cent of the total mortality following surgical operations for this disease. In the experience of individual observers,¹⁴ the mortality from perforation alone accounts for twenty per cent of the total mortality in a general series of cases. This mortality is sufficiently great of itself, but there is, I think, an additional but unknown mortality chargeable to the too conservative treatment of acute cholecystitis. In the study of the 35,000 cases, I find that complications following operation such as peritonitis, hemorrhage, shock, ileus, etc., are responsible for approximately thirty-five per cent of the total mortality in operations upon the gall-bladder and bile ducts, and it seems perfectly clear that a part of this mortality is the result of difficulties and complications attending the surgical treatment of late manifestations of acute cholecystitis such as latent or long-standing extracholecystic abscess, liver abscess, adhesions, fistulae between gall-bladder and neighboring viscera, and inflammatory stricture of the common duct.

3 To reiterate, is the danger of operating in the acute stage of the disease before gangrene and perforation have occurred greater than the dangers of gangrene and perforation, the result of waiting for the so-called interval? There has been and still is a fairly widespread opinion that there is a definitely greater danger to the patient in operating in the acute stage of the disease, the presumed or real dangers being due to the failure of the patient to adjust himself to or establish resistance against the acute infection and to the oft-stated difficulties of the operation itself. The truth of the matter can be determined only by confining our studies to the disease we are

discussing—acute cholecystitis—and by a comparison of the results of the conservative method of treatment with the results in an equal number of cases in which a serious and deliberate effort has been made to operate before gangrene and perforation have occurred. Unfortunately available data in the literature to make such a comparison are meager. The mortality in acute cholecystitis based upon the experience of eight authors in 1275 cases varies between 47 and 225 per cent and averages 8.7 per cent. It should be pointed out, however, that this mortality is the result of the conservative policy rather than the result of a deliberately early attack upon the disease. The mortality in general following operations upon the gall-bladder and bile ducts based upon my study of 36,623 cases varied between 26 and 104 per cent and averaged 6.6 per cent. This, however, is an inclusive mortality for it includes the mortality in chronic cholecystitis and cholelithiasis which make up the larger number of cases in any series. This mortality, therefore, cannot be compared with the mortality of acute cholecystitis. I have made a diligent search of the literature and I fail to find careful accurate reports of any considerable series of cases strictly of acute cholecystitis treated by conservative methods with the results of this treatment, nor do I find any considerable series of cases of acute cholecystitis in which an early attack upon the disease has been deliberately planned and more or less consistently carried out. Nevertheless, the recent literature has supplied important information bearing on the proposition we are discussing. It has shown that if acute cholecystitis is studied by itself, its mortality following conservative methods of treatment is unexpectedly high. It has also shown that the dangerous lesions of the gall-bladder—gangrene and perforation—increase in frequency the longer the attack persists, and that the mortality increases greatly coincident with these complications.

What data I can find fail to establish the truth of the proposition that the danger of operating in the acute stage of acute cholecystitis is greater than the dangers of delay with the purpose of awaiting the disappearance of the acute manifestations of the disease. Rather they indicate that it is not sound. My own experience also does not support it. In my Cincinnati series, Zimninger showed that of thirty-five cases of acute cholecystitis subjected to immediate operation, the mortality was zero in twelve in which the attack was less than twenty-four hours in duration, 66 per cent in fifteen cases in which operation was per-

formed two to five days after the onset of the attack, and twenty-five per cent in eight cases in which operation was performed more than five days after the onset of the attack. In fifty-four cases in which a waiting policy was pursued before operation was performed, mortality was 55 per cent in eighteen cases in which the attack was less than one week in duration, and 83 per cent in thirty-six cases in which the attack was more than one week in duration. There is no evidence here that operation early in the attack is attended by a high mortality, on the contrary, operation in the early stages of acute cholecystitis in this series resulted in the lowest mortality.

My experience at the New York Hospital differs from that at Cincinnati in that since its opening in 1932 our attitude has been, whenever the patient's condition permitted, to deliberately operate early in the acute attack and with the purpose of lowering the mortality due to gangrene and perforation. As a result of this attitude practically seventy percent of the 126 cases of acute cholecystitis in this series were subjected to operation the day of admission to the hospital while thirty percent were observed forty-eight hours or more before operation was performed. Delay in operation, I find, was due either to time consumed in getting patients in favorable condition for operation or in differentiating between acute cholecystitis and other conditions with which it may be confused. Of the two reasons for delay, the former was by far the more frequent.

In the 126 cases deliberately subjected to early operation (cholecystectomy 113, cholecystostomy 12, drainage for peritonitis 1) there were five deaths, a mortality of 39 per cent. If I eliminate one case which does not bear upon the particular problem we are discussing—a child of nine with acute gangrenous typhoid cholecystitis and generalized peritonitis—there are 125 cases which come within our discussion with four deaths, a mortality of 3.2 per cent. Analyzed from the viewpoint of the extent of the disease, there were 112 cases of acute cholecystitis without demonstrable perforation of the gall-bladder and without extracholecystic abscess or other serious intra-abdominal complications. In this group of 112 cases there were two postoperative deaths, a mortality rate of 1.8 per cent. In thirteen cases with demonstrable perforation of the gall-bladder and with extracholecystic abscess (12) and generalized peritonitis (1), there were two deaths, a mortality rate of 15.3 per cent.

The experience gained from these two series of cases while, perhaps, not yet sufficiently large to warrant positive and dog-

matic statements, has convinced me that the dangers of operating in the acute stage of acute cholecystitis have been overestimated and are, in fact, less than the dangers of gangrene and perforation to which patients are subjected by waiting for the attack to subside. The mortality rate of 18 per cent in 112 cases deliberately subjected to early operation and actually operated upon before perforation of the gall-bladder had occurred is lower than the most favorable mortality rate in any general series of cases reported in the literature, and indicates that neither the supposed dangers due to failure of adjustment to infection nor to technical difficulties in the operative procedure outweigh the dangers of the waiting policy.

Summary

1 Frequently it is not possible from the clinical manifestations of acute cholecystitis accurately to visualize the course of the inflammatory process in the gall-bladder. Gangrene and perforation of the gall-bladder may exist or occur in the presence of subsiding symptoms. Delay in operation, therefore, without good reason, would seem unwise.

2 Gangrene or gangrene and perforation of the gall-bladder in acute cholecystitis occur too frequently and contribute too greatly to the mortality of the disease to be disregarded, especially since both the condition and the mortality largely are preventable. As has been shown the incidence of gangrene and perforation in acute cholecystitis is probably twenty percent and the mortality represents from ten to twenty per cent of the total mortality in noncancerous disease of the gall-bladder and bile ducts.

3 The dangers of operation in acute cholecystitis in any stage before perforation has occurred have been overemphasized and are distinctly less than the dangers of gangrene and perforation the result of a waiting policy. In 112 cases subjected to operation before perforation had occurred, the mortality was 18 per cent.

From these considerations, my attitude toward the treatment of acute cholecystitis is apparent. It is not the attitude that acute cholecystitis constitutes an emergency in the sense that every case must immediately be subjected to operation, but an attitude, the purpose of which is to lower the mortality in acute cholecystitis.

Not only does the inflammatory process in acute cholecystitis lead to gangrene and perforation of the gall-bladder under conservative treatment, but the mortality from these complications is high. In the Cincinnati series, the mortality following perforation of the gall-bladder was 187 per cent, in 800 cases in the Old New York Hospital it was 347 per cent, in the present series it was 153 per cent. A study of recent literature shows that in the experience of fourteen authors covering over 500 cases of perforation, the mortality varied between fifteen and sixty-five per cent and averaged forty-six per cent. Eliason and McLaughlin³ in a study of 555 cases of perforation, find a mortality which varied between eleven and fifty-eight per cent, but averages 47.6 per cent. This mortality, I find from a study of 35,000 cases of non-cancerous disease of the gall-bladder and biliary tract, represents ten per cent of the total mortality following surgical operations for this disease. In the experience of individual observers,¹⁴ the mortality from perforation alone accounts for twenty per cent of the total mortality in a general series of cases. This mortality is sufficiently great of itself, but there is, I think, an additional but unknown mortality chargeable to the too conservative treatment of acute cholecystitis. In the study of the 35,000 cases, I find that complications following operation such as peritonitis, hemorrhage, shock, ileus, etc., are responsible for approximately thirty-five per cent of the total mortality in operations upon the gall-bladder and bile ducts, and it seems perfectly clear that a part of this mortality is the result of difficulties and complications attending the surgical treatment of late manifestations of acute cholecystitis such as latent or long-standing extracholecystic abscess, liver abscess, adhesions, fistulae between gall-bladder and neighboring viscera, and inflammatory stricture of the common duct.

3 To reiterate, is the danger of operating in the acute stage of the disease before gangrene and perforation have occurred greater than the dangers of gangrene and perforation, the result of waiting for the so-called interval? There has been and still is a fairly widespread opinion that there is a definitely greater danger to the patient in operating in the acute stage of the disease, the presumed or real dangers being due to the failure of the patient to adjust himself to or establish resistance against the acute infection and to the oft-stated difficulties of the operation itself. The truth of the matter can be determined only by confining our studies to the disease we are

discussing—acute cholecystitis—and by a comparison of the results of the conservative method of treatment with the results in an equal number of cases in which a serious and deliberate effort has been made to operate before gangrene and perforation have occurred. Unfortunately available data in the literature to make such a comparison are meager. The mortality in acute cholecystitis based upon the experience of eight authors in 1275 cases varies between 47 and 225 per cent and averages 8.7 per cent. It should be pointed out, however, that this mortality is the result of the conservative policy rather than the result of a deliberately early attack upon the disease. The mortality in general following operations upon the gall-bladder and bile ducts based upon my study of 36,623 cases varied between 26 and 104 per cent and averaged 6.6 per cent. This, however, is an inclusive mortality for it includes the mortality in chronic cholecystitis and cholelithiasis which make up the larger number of cases in any series. This mortality, therefore, cannot be compared with the mortality of acute cholecystitis. I have made a diligent search of the literature and I fail to find careful accurate reports of any considerable series of cases strictly of acute cholecystitis treated by conservative methods with the results of this treatment, nor do I find any considerable series of cases of acute cholecystitis in which an early attack upon the disease has been deliberately planned and more or less consistently carried out. Nevertheless, the recent literature has supplied important information bearing on the proposition we are discussing. It has shown that if acute cholecystitis is studied by itself, its mortality following conservative methods of treatment is unexpectedly high. It has also shown that the dangerous lesions of the gall-bladder—gangrene and perforation—increase in frequency the longer the attack persists, and that the mortality increases greatly coincident with these complications.

What data I can find fail to establish the truth of the proposition that the danger of operating in the acute stage of acute cholecystitis is greater than the dangers of delay with the purpose of awaiting the disappearance of the acute manifestations of the disease. Rather they indicate that it is not sound. My own experience also does not support it. In my Cincinnati series, Zininger showed that of thirty-five cases of acute cholecystitis subjected to immediate operation, the mortality was zero in twelve in which the attack was less than twenty-four hours in duration, 6.6 per cent in fifteen cases in which operation was per-

flamed gall-bladder, and yet an inflammation that can be recovered from with relatively little observable damage the matter probably concerns the type of the infecting organism. With appropriate treatment, of the "deferred operation" type—omental adhesions are formed in a barrier about the inflamed gall-bladder and the exudates are absorbed. Operation upon some of these very acutely inflamed gall-bladders, at the end of the rest period, discloses a general peritoneal cavity which is not inflamed, edematous omental adhesions about the gall-bladder which are easily separated and when put aside disclose a gall-bladder still acutely inflamed, perhaps with minor perforations, and in the grossest aspect, with gangrenous spots, and containing pus and stones. But definitely a localized lesion, and localized by the patient's own forces of resistance which show, in his improved condition a general effect as beneficent as the local. The acutely inflamed gall-bladder, therefore, probably because of the nature of the infecting organisms usually involved, shows a very definite and decided ability to localize itself. This is not the invariable rule, but it is the rule.

The picture of the acutely inflamed appendix is quite different, gangrene and perforation are common, diffuse peritonitis is the rule, but the behavior of the peritoneum is different. In acute appendicitis, the peritonitis is diffuse, spreading, tends to become generalized, and the feeble barriers of inflammation erected by the defensive forces of the body are swept aside as swiftly as they are formed by the vicious onrush of an infection of such nature as to overwhelm the local forces of resistance. Here too the reason is probably largely the type of organism usually found in inflammation of the appendix. So the pathological march of events in the acutely inflamed appendix is toward a generalized peritonitis without adequate localization and without regression. This is not an invariable rule, but it is the rule.

Second, operability. In acutely inflamed gall-bladders the patient is in a condition which leaves much to be desired. Pain is frequently extreme, and in the cases of stone, is excruciating. Shock, due to excessive pain and rapidly spreading diffuse peritonitis, is a prominent feature, almost always present in very marked degree. With the onrush of peritoneal involvement the pulse is quickened, and very early in the severe infections, the temperature is well-elevated. But of all the features which are compelling in withholding immediate operation shock is the most striking and important. We must put shock upon shock

if we are to operate immediately. It can be done, but if there is a safe method to avoid it, it should not be done. I believe that delay will increase the safety of the operative procedure. But if delay is dangerous, then the dangers of delay must be put into the balance against the delay itself. We must all found our work upon our experience, and my experience brings me to the opinion that the danger of delay is less than the danger of an immediate operation. Contrast the picture of a patient suddenly seized with severe pain, rising temperature, mounting pulse, definitely shocked, and very sick, with the same patient after two weeks of rest, with sedation, ice bag, eventual bowel movements, and good nursing—now free from pain, afebrile, with normal pulse, with little or no rigidity, and no longer "sick"—and no surgeon would choose the former state as one preferable for operation. Remember that this outcome of deferred operation is not the invariable rule, but it is the rule.

Concerning statistics, I must say I find them positively cantankerous, but I shall do the best I can with them. I believe that the usually accepted method of treatment should be more definitely defined. It does not appear to me that a postponement of operation for a period of less than two weeks can be properly referred to, in the severe inflammations, as deferred operation. Further than this, I also consider that operation two-five days after the onset of symptoms constitutes early operation, if not immediate. I believe that Doctor Heuer's statistics are interesting, and are open to more than one interpretation. In one series, he reports twelve cases operated within twenty-four hours of the onset of the attack without a death, a mortality rate of zero cannot be much improved upon, but it is fair to assume, without cavilling, that these were decidedly the patients in the best condition of the series. The fifteen cases operated two-five days after onset with 66 percent mortality is surely creditable, for they, too, fall within my definition of cases operated upon during the period described as "more than five days" shows a mortality of twenty-five per cent a little higher than the usual average. The total mortality of these thirty-five cases, "subjected to immediate operation" is nearly ten per cent, also higher than the average, but it is fair to point out that this series of cases is small and percentages are likely to fluctuate sharply. Doctor Heuer's second series of 125 cases, showing a total mortality of 32 per cent and a selective mortality of 18 per cent can only be described

by every method we know, including early operation. It ignores as unfounded by experience the idea that the danger of operation in the acute stage of the disease is greater than that of gangrene and perforation, just as it does in acute appendicitis. It, therefore, accepts early operation as the safer method in the majority of cases. It appreciates, however, that acute cholecystitis is a disease which in general occurs in older age groups than does acute appendicitis and that in

a far higher proportion of cases hypertension, arteriosclerosis, and cardiac and renal diseases are present. It, therefore, recognizes that delay in order to improve the general condition of patients may be wiser in a certain number of cases than too hasty operation. This attitude is the reverse of the conservative attitude in that it deliberately intends early operation, but may withhold it when, in the judgment of the surgeon, it seems unwise. 525 E. 68 St.

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Discussion

DR. ALEXANDER NICOLL, *New York City*—I shall agree at once with a part of the conclusions of Dr. Heuer, but in doing so I shall introduce what Teddy Roosevelt called a little "weasel word" here and there.

In his conclusions Doctor Heuer says in effect "From the clinical manifestations it is not possible to visualize the course of the inflammatory process in the gall-bladder." To this I agree. I would go further and say it is not even possible consistently to diagnose the extent or severity of the existing inflammation. But whether delay in operation is a factor in the production of gangrene and perforation must remain an academic discussion; it is not susceptible to proof. It would seem rather that the question is, shall we deal at once with gangrene and perforation *in the making*, and in the patient unfavorably disposed for operation, or shall we wait to operate upon this *same* gangrene and perforation after the patient's own bodily resistance has made the operative procedure a safer matter because of the improved general condition, and the absence of shock?

As to the proposition that gangrene or perforation of the gall-bladder in acute cholecystitis occur *too frequently* and contribute too greatly to the mortality of the disease—I agree. But that is a condition over which we have little control; the patient comes to us with these conditions already developed and we must treat him as well as we can. I have already indicated that I think we are not justified in believing that delay in operation is the

factor that determines the presence of these vicious complications. Perhaps early recognition of *any* disease of the gall-bladder is the correct solution, and operation upon the *non-acutely* inflamed gall-bladder is the way to avoid the acute gangrenous variety.

As to the dangers of operation in acute cholecystitis having been overemphasized here I cannot agree. The dangers are real, and because they are unnecessarily faced in the extremely acute stage, *must* be avoided.

I shall review very briefly two important phases of the gall-bladder situation, and because Doctor Heuer has indicated that he is inclined to draw inferences from the behavior of the appendix, I should like to point out one or two important differences. I speak under two headings: (1) Pathology and (2) Operability.

First, pathology. The acutely inflamed gall-bladder, filled with stones, containing pus, with gangrenous spots here and there in its walls—the precursors or perforations, perhaps only an hour or two ahead of actual perforation, and constituting potential or physiological perforations—this gall-bladder is rapidly surrounded by peritoneal reaction; the resulting peritonitis is diffuse to some extent, sometimes so widely diffuse as to be called a general peritonitis with the characteristics of peritoneal inflammation including the formation of exudate, serous, or thinly purulent, or plastic. But the peritonitis is usually of the variety that leads to eventual resolution; there is a factor that permits a rather widespread inflammation of the peritoneum about an in-

RELATIONSHIP OF MITRAL STENOSIS TO PULMONARY TUBERCULOSIS

LOUIS FAUGERES BISHOP, JR, M D and ANDREW BABEY, M D, *New York City*

Among the first to study the relationship of mitral disease and pulmonary tuberculosis was Rokitsky.¹ Writing in the middle of the last century, he observed that there was a remarkable, complete antagonism between the two diseases, based, he thought, on the hyperemia of the lungs which followed mitral disease. Very few physicians believe today that both diseases cannot exist in the same person, but many feel that such an occurrence is exceedingly rare. We undertook this study chiefly to discover how rare the combination may be.

To ascertain, if possible, how often these two lesions occurred together, we decided to review the figures at Bellevue Hospital, New York City.* The first set of records examined were those of the Tuberculosis Service. Over 650 autopsies were performed during 1922-1934 on this service. Only four instances of phthisis combined with mitral stenosis were found. This low incidence was misleading and we felt it was due to several factors, one of which was the great difficulty encountered in obtaining autopsies on this, as on any service, another factor to be considered was the great turnover because of the transfer to other institutions.

We next examined the general hospital records. In our search through the post-mortem records of the whole hospital from 1927 to 1934 inclusive, we attempted to include only those cases in which, first, the description of the valve defect very clearly indicated a notable mitral stenosis, no early, nor doubtful, cases were included.

The total number of autopsies was 9,091 during the period as stated, 1927-1934. Out of this number there were 140 cases of mitral stenosis and of these, six had proved pulmonary tuberculosis.

When we studied those with mitral stenosis who were forty-five years of age or younger (presumably the rheumatic group), we found fifty-six cases. Of these fifty-six, four individuals—aged twenty-seven, thirty-four, thirty-five, and

TABLE I

Name	Age	Mitral valve	Lung pathology
O F	50	1½ fingers	Negative
W A	48	1 finger	Negative
M L	Adult	1 finger	Negative
F S	50	1 finger	Negative
H R	60	1 finger	Negative
W F	58	1 finger (easily)	Negative
E R	50	Barely 1 finger	Negative
E C	30?	1 finger	Negative
C Z	80	Stenosis	Negative
J B	32	Tip of finger	Negative
A H	26	1 finger easily	Negative
A K	37	Not even 1 finger	Negative
M H	60	Stenosis	Negative
A F	40	Moderate stenosis	Negative
M K	60	Slight	Negative
C K?	46	1 finger	Negative
A C	55	Tip of index finger	Negative
W P	?	Tip of index finger	Negative
M R	32	1 finger	Negative
E S	42	2 fingers with difficulty	Negative
L K	?	1½ fingers	Negative
J C	53	2 fingers with difficulty	Negative
S K	35	Slt	Negative
A R	48	2 fingers with difficulty	Negative
J W	64	Thick and calcified	Negative
L F	72	Tip of little finger	Negative
A B	28	Barely 1 finger	Negative
J T	76	1 finger with difficulty	Negative
B R	25	1 finger	Negative
A T	36	Advanced sclerosis	Negative
M W	74	1 finger with difficulty	Negative
G B	60	1 finger	Negative
W M	39	1 finger	Negative
M H	43	1 finger	Negative
M K	49	Barely admit tip of finger	Negative
M W	41	Admits 1 finger	Negative
E G	40	Tip of finger	Negative
M C	28	1 finger	Negative
J M	35	Buttonhole	Left apex — a number of circumscribed caseous masses
B D	46	Only tip of finger	Negative
F M	30	Buttonhole	Negative
A P	42	Barely admits tip of finger	Negative
?	32	1 finger	Negative
W K	31	Buttonhole	Negative
J C	19	Tip of one finger	Negative
M S	42	Decidedly retracted and thick	Negative
J B	70	Tip of 1 finger	Negative
J B (A)	45	1½ fingers	Left — numerous small tubercles upper and lower lobes. Right — large cavity occupying almost whole right upper lobe. Small foci in right, middle and lower
S P	62	Barely admits 2 fingers.	Negative
C W	middle age	2 fingers	Negative
H B	41	Stenosis	Negative
C D	54	Scarcely admits little finger	Negative
E P	62	Slight stenosis	Negative
J C	35	1 finger	Negative
O K. (B)	34	1 finger	Miliary TBC cav in rt. upper middle and lower lobes
E P	60	Very narrow	Negative
J G	47	Barely admits 2 fingers.	Negative
W M	69	Slight stenosis	Negative
L J	47	1 finger	Negative

* Fourth Medical Division, Bellevue Hospital, New York City, Charles Nammack, M D, Director

as a brilliant achievement. To combine the two series and compute the correct percentage is beyond my feeble arithmetic.

I append a table of 215 cases from my service at Fordham Hospital without comment other than to say that they represent consecutive cases, as they occur in a large and busy municipal hospital, admitted mainly during the depression years when the attention of the typical hospital case was somewhat diverted from care of health to what they considered the more pressing needs of an economic nature. In this series, also, four of the deaths reported received spinal anesthesia and the cause of death, shortly after operation, was certified as shock. This somewhat vicious type of anesthesia clouds the picture. The entire list, however, is given without any revision.

I summarize them briefly thus

Total cases, 214 Total deaths 16, mortality

percentage 7.9 percent. Average time of operation after onset of symptoms, eleven days and varied from one to forty-two days. Seventy percent of the deaths occurred in the cases operated less than two weeks after onset of symptoms.

Acute Gall-bladders

Acute cholecystitis	110
Acute cholecystitis with cholelithiasis	90
Empyema of gall-bladder perforation of gall-bladder	14
Total	214
Age Varied from 19—77	Average, 43
19—30	41
31—50	125
Over 50	48
Cured or improved on discharge	198
Died	16

Cholecystectomy was done in 205 cases, cholecystotomies performed on nine, of which four died.

CALIFORNIA'S ABOUT-FACE ON HEALTH INSURANCE

"California Medical Association's Change of Attitude on Health Insurance," read the headline over an editorial published in a recent issue of *California and Western Medicine*.

When boiled down, the editorial said this:

Compared to expressions of sentiment and official action in 1934 and 1935, "a somewhat radical change of front concerning health insurance is quite apparent in the California Medical Association" (It will be remembered that the Association endorsed health insurance at a special session in 1935 when most of the other units of organized medicine were attempting to show the evils of bureaucratic medical schemes.)

California physicians still are deeply interested in hospitalization and medical service plans designed to improve the character and distribution of medical care, but "there is a widespread and accepted belief that because of the far-reaching social welfare factors involved, the solution of such medical relief problems as may be challenging both the profession and the laity, must come about through evolution and trial, and not by some of the revolutionary procedures advocated in the academic discussions of the subject."

At the recent Coronado meeting of the Association, the delegates expressed their interest in these matters but "basing judgment on the votes they gave, there can be little doubt on how goodly a majority of the delegates stood respecting matters of further experimentation with expensive and unsatisfactory surveys, which thus far have led to little more than a startling dissipation

of resources which the Association had slowly accumulated in previous years."

The Coronado delegates felt that the claims of advocates of sickness insurance were exaggerated and "that the remedies advocated were not adapted to achieving desirable ends for either the lay public or the medical profession."

Also, it was pointed out that there is no desire "to pursue, at the expense of the Association's members, further will-o'-the-wisp or other surveys" and that "there was a strong feeling of regret that the delegates who were members of the previous sessions of the House of Delegates should have embarked the Association upon expenditures far in excess of those first proposed and estimated by the salaried survey staff, running, indeed, into so massive a sum of the Association's funds as to be in excess of fifty thousand dollars."

There is a world of significance in the benediction

"Now, that so much has been spent, and there is so little to show therefrom, the realization of what is construed as hasty and ill-advised action becomes more and more apparent."

In other words, remarks the *Ohio State Medical Journal*, California has found its excursion to the "left," costly, unproductive and embarrassing. It may find out later that it has compromised itself to such an extent that only heroic action will prevent its previous policies from becoming boomerangs.

The California episode should serve as a warning to the other units of organized medicine.

INCREASING IMPORTANCE OF UNDULANT FEVER

JEROME KOGAN, M D, *Stamford*

The 1929 edition of Cecil's *Textbook of Medicine* describes this disease under the heading of Malta fever, and states that isolated cases sometimes occur in the United States "It is caused by *Micrococcus melitensis* and is usually spread by goat's milk" In parenthesis, the less common names are given as Mediterranean fever, Cyprus fever, undulant fever, etc The impression I gathered in my medical course was that this disease was unlikely to be encountered in my practice in New York State

Scarcely six years have elapsed since the issue of this textbook, and only three since the beginning of my active practice Yet today I would not dream of making a diagnosis of acute appendicitis or arthritis, or feel that I have exhausted the possibilities in an unusual case until I had definitely excluded undulant fever Clinically, the disease caused by *Bacillus abortus* is indistinguishable from Malta fever in man, and bacteriologically the similarity to *Micrococcus melitensis* is so great as to make one wonder if they are not identical

Undulant fever is readily transmitted to consumers of raw milk So prevalent has this infection become that few herds are entirely free from it If you live in New York State, it is almost certain that the milk on your table has come from an infected herd Thanks to pasteurization, the larger cities have considerable protection, but the extensive use of raw milk in smaller communities and farms has increased the number of cases to alarming proportions, and the vacationist may readily acquire the disease and return to contaminate the food supply in his household Thus this becomes a public health problem for the big city as well as for the village and farm

The disease sometimes presents a typical undulant fever However, many patients have little or no apparent fever Often some other clinical entity is stimulated, or no definite picture may be given Some patients are very sick, others may have only slight malaise The diagnosis cannot be made on physical examination alone, the disease must be kept

constantly in mind and possibilities tested for it A history of abortion in a herd is suggestive Definite diagnosis is made in the laboratory by agglutination tests for *B. abortus*, using the serum of blood collected as for a Wassermann examination The test may be made at the bedside or office by use of Huddleson antigen A drop of blood is mixed with a drop of the reagent on a slide and examined microscopically for agglutination A negative test does not exclude undulant fever, as the properties of the blood may not develop for some days Several cases, with positive findings only, are presented to show the variability in symptoms

CASE 1 G, male (Delaware County), age twenty-nine

Chief complaint Run down feeling for six weeks

Present history For six weeks has had poor appetite, tires easily, lassitude, occasionally slight fever

Examination Temperature 98.8—Rhinitis

Impression Possibly pulmonary tuberculosis

Course The patient eventually consulted a physician familiar with undulant fever, which was found on laboratory test

CASE 2 R. C, female (Delaware County), age fifty-four

Chief complaint Severe headache for one week

Past history Hypertension

Present illness Dizzy spells for one week with peculiar headache in frontal and occipital regions Painful eyeballs Slight nausea several days

Examination Temperature 100.5 Pulse one hundred Blood pressure 170/95 Moderate nasal and pharyngeal congestion and cervical adenitis

Diagnosis Upper respiratory infection

Course Three days later patient returned, complaining that she was no better A blood specimen was taken

Laboratory report Positive for undulant fever 1 320

CASE 3 F D, male (Otsego County), age fifty-two

Chief complaint General malaise two months

Present illness Had not felt well for two months A cold for about three weeks

A T	40	2 fingers	Negative
M E	33	Slt. stenosis	Negative
O	43	1 finger	Negative
M C	65	Barely tips of 2 fingers	Negative
P R	48	1½ fingers	Negative
R K	51	1½ fingers	Negative
M K	30	1 finger	Negative
N H	82	Barely 2 fingers	Negative
T D	60	Somewhat narrow	Negative
M H	49	Somewhat narrow	Negative
J V	60	Stenosis	Rt. upper cavity
M C	54	Barely 1 finger	½"x1" — negative
M M	Middle age	Buttonhole	Negative
D O	37	1 finger	Negative
F P	60?	Very narrow	Negative
A W	47	Buttonhole	Negative
A L	67	1 finger	Negative
T S	60	1½ fingers	Cavity in right apex—½" and multiple tubercles below cav
E G	64	Stenosis	Negative
G B	30	Not even 1 finger	Negative
F O	88	1 finger	Negative
S K	60	1½ fingers	Negative
M P	59	1 finger	Negative
S M	9	1 finger	Negative
P W	60	Slt. Stenosis	Negative
H S	23	1 finger	Negative
H S	37	Slt-like	Negative
M G	54	1 finger easily	Negative
H N	Adult	1 finger easily	Negative
C V	70	Hardly 1 finger	Negative
D S	52	Not even 1 finger	Negative
I G	28	Barely 2 fingers	Negative
F W	31	Only 1 finger	Negative
G B	22	Scarcely tip of finger	Negative
M M	68	1 finger	Bilateral Bronchiet
D S	38	1½ fingers	Negative
D M	51	Won't admit 1 finger	Negative
L M	35	Buttonhole	Negative
A S	72	Slt. contraction	Negative
G S	71	Stenosis	Negative
F R	62	1 finger	Negative
C C	30?	Fish mount	Negative
R W	62	Slt. Stenosis	Negative
G R	49	2 fingers with difficulty	Negative
J R	58	1½ fingers	Negative
J H	20	On ½ finger	Negative
?	45	1 finger	Negative
M L	50	1 finger	Negative
M D	50	Fish mount	Negative
J E	28	Rigid, firm	Negative
C C	55	1½ fingers	Negative
H S	36	1 finger	Negative
R J	36	1 finger	Negative
J H	34	Marked stenosis	Negative
T D	44	Some stenosis	Negative
H K	51	Fish mouth	Negative
C G	63	Stenosis	Negative
A M	60	1 finger	Negative
A G	33	Won't admit 1 finger	Negative
A M	65	Slt. stenosis	Negative
N W	54	Stenosis	Negative
J W	36	Slt Stenosis	Negative
N M	35	1 finger	Negative
C P	85	Tip of finger	Negative
R G	20	Stenosis	Negative
F E (C)	27	¼ cm in diam	Miliary TBC
A P	45	Barely admits 1 finger	Negative
J C	52	Marked stenosis	Bronchiectasis
J B	60	Buttonhole	Negative
R G	21	1 finger	Negative
D S	50	Funnel-shaped	Negative
A Z	19	No stenosis on post mortem	Negative
I M	35	Stenosis	Negative
J S	35	1 finger	Negative
M W	39	Stenosis	Negative
E S	58	Buttonhole	Negative
J M	?	Mild stenosis	Negative
J G	74	Stenosis	Bronchiectasis
C M	65	1 finger	Negative
S S	33	4 cm	Negative

forty-three—had pulmonary tuberculosis, an incidence of seven per cent for the younger group. Typical examples were as follows.

J B (A) had extensive cavernous tuberculosis with advanced mitral stenosis

O.K. (B) showed miliary tuberculosis with cavitation in the right upper, middle and lower lobes, in addition to a tight stenosis.

F E (C) showed miliary tuberculosis and ulcerative tuberculosis, there was also a very marked mitral stenosis.

We attempted to discover which lesion appeared first in these patients, but the clinical records were not complete, for these younger patients died from one to seven days after admission to the hospital.

Discussion

These figures and data suggest a more critical estimate of the work of the early writers. In the first place, mitral stenosis and pulmonary tuberculosis can and do occur together, and are by no means rare according to our figures. Moreover, it is our belief that clinically the two are even more common than shown by this pathological study. We feel that the possibility of the occurrence of pulmonary tuberculosis should be entertained and investigated in every blood-spitting "mitral case" as well as in others. We also find it impossible to subscribe to the view that pulmonary tuberculosis is less virulent, more local, and runs a chronic course with a tendency to heal, when mitral stenosis is present. It has been cited frequently that when a tight stenosis existed, the chances of recovery were greater. This was difficult to confirm, as the persons who were studied died soon after admission of an extensive and destructive type of tuberculosis, despite a very extreme degree of mitral stenosis. Perhaps one reason why we do not see the combination of mitral stenosis and phthisis more frequently is because many of these patients are either told they have a murmur or heart disease. For that reason they moderate their activity because they soon find out that exertion and exercise disturb the heart rate or breathing. Automatically, they adopt a modified tuberculosis regime, or it is enforced by those responsible for their care.

Conclusion

A review of the relationship of mitral stenosis and pulmonary tuberculosis at Bellevue Hospital shows that this association is by no means rare.

121 E. 60 St

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Chief complaint General malaise two months

Present illness Had not felt well for two months A cold for about three weeks

A T	40	2 fingers	Negative
M E	33	Slt. stenosis	Negative
Q	43	1 finger	Negative
M C	65	Barely tips of 2 fingers	Negative
P R	48	1½ fingers	Negative
R K	51	1½ fingers	Negative
M K	30	1 finger	Negative
N H	82	Barely 2 fingers	Negative
T D	60	Somewhat narrow	Negative
M H	49	Somewhat narrow	Negative
J V	60	Stenosis	Rt. upper cavity
M C	54	Barely 1 finger	½" x 1" — negative
M M	Middle age	Buttonhole	Negative
D O	37	1 finger	Negative
F P	60?	Very narrow	Negative
A W	47	Buttonhole	Negative
A L	67	1 finger	Negative
T S	60	1½ fingers	Cavity in right apex—½" and multiple tubercles below cav
E G	64	Stenosis	Negative
G B	30	Not even 1 finger	Negative
F O	88	1 finger	Negative
S K	60	1½ fingers	Negative
M P	59	1 finger	Negative
S M	9	1 finger	Negative
P W	60	Slt. Stenosis	Negative
H S	23	1 finger	Negative
H S	37	Slt-like	Negative
M G	54	1 finger easily	Negative
H N	Adult	1 finger easily	Negative
C V	70	Hardly 1 finger	Negative
D S	52	Not even 1 finger	Negative
I G	28	Barely 2 fingers	Negative
F W	31	Only 1 finger	Negative
G B	22	Scarcely tip of finger	Negative
M M	68	1 finger	Bilateral Bronchuet
D S	38	1½ fingers.	Negative
D M	51	Won't admit 1 finger	Negative
L M	35	Buttonhole	Negative
A S	72	Slt. contraction	Negative
G S	71	Stenosis	Negative
F R	62	1 finger	Negative
C C	30?	Fish mount	Negative
R W	62	Slt. Stenosis	Negative
G R	49	2 fingers with difficulty	Negative
J R	58	1½ fingers	Negative
J H	20	On ½ finger	Negative
?	45	1 finger	Negative
M L	50	1 finger	Negative
M D	50	Fish mount	Negative
J E	28	Rigid firm	Negative
C C	55	1½ fingers	Negative
H S	36	1 finger	Negative
R J	36	1 finger	Negative
J H	34	Marked stenosis	Negative
T D	44	Some stenosis	Negative
H K	51	Fish mouth	Negative
C G	63	Stenosis	Negative
A M	60	1 finger	Negative
A G	33	Won't admit 1 finger	Negative
A M	65	Slt. stenosis	Negative
N W	54	Stenosis	Negative
J W	30	Slt. Stenosis	Negative
N M	35	1 finger	Negative
C P	85	Tip of finger	Negative
R G	20	Stenosis	Negative
F E (C)	27	½ cm in diam	Miliary TBC
A P	45	Barely admits 1 finger	Negative
J C	52	Marked stenosis	Negative
J B	60	Buttonhole	Bronchectasis
R G	21	1 finger	Negative
D S	50	Funnel-shaped	Negative
A Z	19	No stenosis on post mortem	Negative
I M	35	Stenosis	Negative
I S	55	1 finger	Negative
M W	39	Stenosis	Negative
B S	58	Buttonhole	Negative
J M	?	Mild stenosis	Negative
J G	74	Stenosis	Bronchectasis
C M	65	1 finger	Negative
S S	33	4 cm	Negative

forty-three—had pulmonary tuberculosis, an incidence of seven per cent for the younger group. Typical examples were as follows

J B (A) had extensive cavernous tuberculosis with advanced mitral stenosis

O K. (B) showed miliary tuberculosis with cavitation in the right upper, middle and lower lobes, in addition to a tight stenosis

F E (C) showed miliary tuberculosis and ulcerative tuberculosis, there was also a very marked mitral stenosis

We attempted to discover which lesion appeared first in these patients, but the clinical records were not complete, for these younger patients died from one to seven days after admission to the hospital

Discussion

These figures and data suggest a more critical estimate of the work of the early writers. In the first place, mitral stenosis and pulmonary tuberculosis can and do occur together, and are by no means rare according to our figures. Moreover, it is our belief that clinically the two are even more common than shown by this pathological study. We feel that the possibility of the occurrence of pulmonary tuberculosis should be entertained and investigated in every blood-spitting "mitral case" as well as in others. We also find it impossible to subscribe to the view that pulmonary tuberculosis is less virulent, more local, and runs a chronic course with a tendency to heal, when mitral stenosis is present. It has been cited frequently that when a tight stenosis existed, the chances of recovery were greater. This was difficult to confirm, as the persons who were studied died soon after admission of an extensive and destructive type of tuberculosis, despite a very extreme degree of mitral stenosis. Perhaps one reason why we do not see the combination of mitral stenosis and phthisis more frequently is because many of these patients are either told they have a murmur or heart disease. For that reason they moderate their activity because they soon find out that exertion and exercise disturb the heart rate or breathing. Automatically, they adopt a modified tuberculosis regime, or it is enforced by those responsible for their care.

Conclusion

A review of the relationship of mitral stenosis and pulmonary tuberculosis at Bellevue Hospital shows that this association is by no means rare

121 E. 60 St

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VASOMOTOR AND ATROPHIC RHINITIS

Relation to Body Fluids and Sodium Metabolism

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By far the most baffling of clinical entities with which the rhinologist is confronted are vasomotor rhinitis and atrophic rhinitis. The vast amount of discussion that the first of these has brought about is evidence of the lack of proper interpretation. As for atrophic rhinitis, most rhinologists feel that it is a hopeless chronic affliction and treat it palliatively. Those with more imagination experiment with endocrine therapy but in an uncontrolled hit or miss manner.

The two conditions, peculiarly enough, seem to result from a common cause, namely, abnormal fluid content of the tissues. Nor is this abnormality confined to the nasal lining. Even casual study will show that symptoms attributable to tissue fluid abnormality are present in other parts of the body.

If one were to graphically chart the color and consistency of nasal mucosae of patients free of demonstrable infection and normal hemoglobin, he would find that they make a curve similar to a curve of growth variation, or variations in weight, baso-metabolic rates, etc. The point is that the nasal mucosa shows a physiologic variation. At one extreme end of the curve there would be a small number of dry, red, hyposecretory nasal membranes, at the other, a small number of pale edematous membranes, between these extremes, varying degrees of pink to red which we arbitrarily call normal. It is the cases at each extreme which vary so much from the physiological that they are regarded as pathological.

The outstanding difference being the variation in the amount of fluid in the tissue, it occurred to the writer that a clear comprehension of the physiology and chemistry of tissue fluids would perhaps open the way to a clearer interpretation of the troublesome clinical entities. Furthermore, the observation that there is a gradual variation in individuals with the extremes approaching a pathological status suggested that the phenomenon may ultimately be found to depend on one particular factor somehow related to the

complex metabolism of body fluids and their constituents.

It is beyond the scope of this paper to go into the intricate details of the physical chemistry of the fluids of the body. A perusal of the older and modern literature on the subject shows that a tremendous amount of work has been done, and that very illuminating facts have been discovered. The writer will only briefly summarize some of these and trust that aroused interest will lead to further study of the references given.

The principal body fluids are blood serum, lymph, interstitial fluid which includes intercellular fluid, and intracellular fluid. The lymph need not be considered here as it is only a specialized mechanism for the absorption from the interstitial fluid of colloid material which is not diffusible through the other avenues of interchange. The blood serum, interstitial, and intracellular fluids are those open the way to a clearer interpretation of constituents of these fluids has been thoroughly investigated and we shall point out the important factors.

It was shown by Starling¹ that capillaries are not only capable of filtering fluid into the interstitial environment by virtue of the hydrostatic pressure, but also of reabsorbing fluid by virtue of the colloid osmotic pressure of the blood serum. Krogh² showed that the hydrostatic pressure in capillaries have a gradient, decreasing as they approach the venous. The reabsorption which is due to colloid osmotic pressure is opposed by the hydrostatic pressure and therefore will be inversely proportional to it. Krogh also showed³ that the permeability of the capillaries can be altered through nervous control and that they possess an independent power of contractility.

The nature of interstitial fluid has merited considerable discussion. It seems, however, finally agreed that it is an ultrafiltrate and not a secretory product.⁴ Since interstitial fluid is an ultrafiltrate of diffusible elements in blood serum, one would expect that its electrolyte pattern

with headache, general body aches, morning cough, and slight loss of weight

Examination Temperature 99.2 Pharyngitis Coarse rales and wheezing breath sounds bilaterally

Impression Tuberculosis Rule out undulant fever

Laboratory report Positive for undulant fever 1 80

CASE 4 V H, male (Schoharie County), age sixteen

Chief complaint Pain in left elbow

Present illness Pain in left elbow and left knee for two weeks Wringing sweats at night, sleepiness, tires easily Slight cough

Examination Temperature 98.7 Pulse ninety Pale Rhinitis

Impression Possible undulant fever History cattle abortion

Laboratory report Positive 1 2500

CASE 5 M S, male (Delaware County), age nine

Chief complaint Abdominal distention

Past History Appendicitis four years ago, treated medically

Present illness For three days patient has had no bowel movements and marked distention After two more days of observation by the family physician, the boy was sent to the hospital where I saw him in con-

sultation Temperature 102 Pulse ninety-eight. White blood count 6550 Marked distention. Patient states he does not feel sick My impression was acute appendicitis, and suggested further observation All this time (five days) there had been no bowel movement.

Course After several attempts, enemas became productive, and the distention subsided Temperature continued to fluctuate between 99 and 104 The temperature curve suggested undulant fever

Laboratory report Positive 1 640

CASE 6 J S, female (Delaware County), age eleven and one-half

Chief complaint Abdominal pain

Present illness The family physician obtained the following history Chills and fever shortly after breakfast. Abdominal pain, intermittent, progressively worse. He found tenderness in both lower quadrants and in the loin on the right. Rectal tenderness on the right Temperature 102 Pulse 120 White count 11,500 Bedside test for undulant fever negative. He removed the appendix, with the author assisting

Course The temperature continued high and the patient's appearance seemed unusual The test for undulant fever was repeated and found strongly positive.

ROOSEVELT AVE.

PUNCH-DRUNK BOXERS AND FOOTBALL PLAYERS

When Gene Tunney noticed the first signs of being punch-drunk, he vowed to leave the prize ring That he was a wise young man is indicated by the recent study made by Edward L Carroll, Jr, Pittsburgh psychiatrist and boxing enthusiast who started his study of this condition while a medical student. His evidence points to many tiny ruptures of the blood vessels of the brain as being responsible for punch-drunkness

Other sports in which head blows are numerous, as in football, can cause a similar condition Attention, concentration, and memory suffer permanently in a full-grown

case of punch-drunkness, the victim is often unusually talkative, but rambles and repeats himself, his speech may show some impediments, eye become slightly glazed, walk unsteady, voice thick.

The punch-drunk person seldom realizes his condition, and is inclined to be offensive when accused of it. If your boy plays football, he should wear a well-padded head gear during every second of practice and play Those tiny ruptures seem to be permanent for the punch-drunk athlete usually goes from bad to worse.

—*Health Digest*

ADD ACCIDENTAL DISCOVERIES

An anecdote in a new book on "Food, Fitness and Figure" refers to Eijkmann's discovery of the cause of beriberi The doctor, stationed in a prison camp in Java, hired a native boy to feed his pigeons, and from time to time gave him money to buy rice for this purpose. The boy, however, got the steward of the camp to give him the

rice, and put the money in his pocket. This rice was polished, and the birds, like the inmates of the camp, soon developed beriberi When the disease among the birds was at its height, the steward went away on leave, and the boy was obliged to buy rice in the market. This happened to be unmilled and when it was fed most of the birds recovered.

loids retained in the serum, a greater amount of potassium and calcium will be bound in an undissociable form perhaps depleting the interstitial fluid of these elements of which it normally has but small quantities. The base in the interstitial fluid, which is normally ninety per cent sodium, will increase to be almost entirely composed of sodium. The exact reverse of this phenomenon can occur with excessive excretion of sodium in which a general loss of fluids will result. Both these states can be produced by a hyperactivity or a hypoactivity of the adrenal cortex hormone.

A few more facts with regard to inorganic environment of tissue will help clarify the writer's theory. Biederman, Ringer, Loeb, and others as quoted by Robertson¹⁴ have shown that solutions of sodium salts caused irritation of muscular and nerve tissue. Solutions of pure salts act as protoplasmic poisons. For physiologic purposes, solutions of sodium salts must contain traces of calcium and potassium. Loeb noted that addition of calcium and potassium salts to sodium counteracted the irritating effects, and determined a ratio of these elements which were of optimal benefit for physiological function.

In experiments on animal physiology, Loeb¹⁵ discovered an important phenomenon. Using fertilized eggs of the marine fish *Fundulus* he found that the cell membrane became permeable when placed in 3 M Sol of Na Cl. However, when 2 c.c. of 10/8 M Ca Cl 2 were added, to fifty c.c. of the above solution the membranes remained impermeable.

To summarize thus far Body fluids contain electrolytic patterns determined by the electrolytic pattern of blood serum. The latter is dependent on the control of its sodium which seems to be determined by a hormone secreted by the adrenal cortex. Increases in the amount of sodium leads to fluid retention or edema and to depletion of traces of calcium and potassium in the interstitial fluid which is the inorganic environment of the cells being unbalanced physiologically has an irritating effect on the cells and alters the cell membranes so that they become permeable to foreign substances.

The above observations lend themselves very readily to clinical interpretation of vasomotor rhinitis and atrophic rhinitis. The two conditions are extremes in physiologic variation of fluid and elec-

trolyte balance. Especially do these observations help explain the apparent allergic status associated with vasomotor rhinitis. The writer firmly believes that vasomotor rhinitis in itself is not an allergic state, but is the result of faulty fluid and sodium balance. In this state abnormal permeability is often present and the patient may become sensitized to allergens which from time to time penetrate the permeable membranes.

Similarly, the writer believes that atrophic rhinitis is primarily not an infectious state, but due to fluid depletion and cell atrophy, the protective secretory power is hindered with the result that infection may secondarily set in.

When attempting hormonal therapy, one is beset by great difficulties. Not always is the hormone available in proven potent states, and in the hyperactive states anti-hormonal agents are seldom known. It is for this reason that chemical alterations rather than endocrine were employed in the clinical experiment.

The aim in the cases of vasomotor rhinitis was to deplete sodium and to increase potassium and calcium in a dissociated form by the administration of acidifying agents. A number of patients showing marked pale edematous nasal mucosae were chosen. A capsule was prepared containing the acid salt ammonium chloride five grains, potassium chloride two grains, and calcium gluconate five grains. The dose consisted of one capsule three times daily and quickly increased to three or four capsules three times daily. Ingestion of salt was limited. The results were in several cases remarkable and in all cases satisfactory. Not only were the subjective symptoms of sneezing and obstruction eliminated, but objectively the nasal mucosa lost the pale edema and became pink. In one case the nasal lining approached the dry red hyposecretory condition. When medication was withdrawn, the condition gradually returned to the pale edematous state.

Several patients with dry "atrophic" nasal membranes were put on forced sodium chloride ingestion—from one to three teaspoons daily. There was a marked improvement in secretion. One case of ozena was treated similarly. There was some improvement inasmuch as the crusts became moist and separated easily.

would be similar. This, however, is not the case. The sodium, potassium, and calcium content differs considerably. The reason for this is that in the serum some of these ions are bound with proteins and lipoids forming an undiffusible base. Applying the Gibbs-Donnan principle⁴ of osmosis between diffusible and non-diffusible elements, the difference in electrolyte pattern can be explained. Since the potassium ion has a greater affinity for protein, less of it will diffuse and therefore less of it will appear in the interstitial fluid. The ratio of K to Na in transudates will be smaller than in serum.⁵ However, if serum is acidified there will be a dissociation of combined potassium and the discrepancy will diminish.⁶ The increase of ultrafiltrability of calcium in acidified serum can be explained in the same way.⁷

Interstitial fluid, although an ultrafiltrate of blood serum, consists chiefly of chloride and bicarbonate of sodium. There is a tendency for accumulation of interstitial fluid when a greater amount of sodium is present, hence producing edema.⁸

From many analyses it seems that the intracellular fluid of the body contains practically no sodium but has potassium as the entire base. The surrounding interstitial fluid, on the other hand, contains mostly sodium with only slight traces of potassium and calcium. The sodium makes up about ninety per cent of its base.⁹ The separation of potassium and sodium in different compartments of an osmotic system, has the advantage of preserving the integrity of the cell against inroads of the external environment. If sodium formed the base for both the intracellular and interstitial fluid, its passage back and forth across the cell membrane, with every slight alteration in osmotic equilibrium, would lead to serious upset to the glycogen, proteins, and lipoids bound to the base. However, the arrangement being as it is, the delay in interchange allows time for other agents to re-establish osmotic equilibrium.

It is obvious that while intracellular and interstitial fluids have different electrolyte patterns from blood serum, they are, nevertheless, derived from it. Furthermore any change in the composition of the serum will be reflected in these other fluids. However the pattern of serum

composition appears to be rigidly guarded. Slight physiologic variations are present, but at all times some mechanism is at work to readjust the balance. This mechanism is the excretory function of the kidneys.

The kidneys with uncanny judgment throw out only those substances which are in excess. In excreting waste products, they guard the intricate details of the electrolyte pattern of the serum and therefore of all the body fluids. Total base and especially sodium receive considerable attention. Nor is any effort seen in substituting other electrolytes for sodium (in cases of abnormal depletion of this element) in order to preserve the electrolyte osmotic pressure. As shown by Loeb¹⁰ and Höglér¹¹ even when sodium is depleted, ingested potassium salts continue to be excreted completely and rapidly.

The mysterious agent that stands guard over serum sodium seems to be of hormonal nature. This hormone seems to originate in the adrenal cortex as demonstrated by Harrop and Weinstein¹² and Loeb.¹³ Harrop and Weinstein found that adrenalectomized dogs could be kept alive by administration of adrenal cortex extract. When the extract was withdrawn there was a marked drop in blood sodium and the animals died with no other demonstrable pathology on autopsy. Robert F. Loeb in a study of electrolyte balance in adrenalectomized dogs obtained similar data. There was a marked loss of sodium from the blood which appeared in the urine. The blood also showed a retention of nonprotein nitrogen and potassium. In his conclusions he suggests the possibility of the adrenal cortex being the regulating mechanism of sodium metabolism in a similar manner to the parathyroids regulating calcium and phosphorous metabolism.

Thus it becomes apparent that any disturbance in sodium metabolism or in sodium excretion will be reflected throughout all the body fluids and will alter the inorganic environment of the tissues. If the total amount of sodium in the body is kept on a high level, there will also be water retention causing edema or increased fluid in the interstitial environment. Furthermore changes in osmotic pressure will result unless the blood serum retains more colloids. With more col-

loids retained in the serum, a greater amount of potassium and calcium will be bound in an undissociable form perhaps depleting the interstitial fluid of these elements of which it normally has but small quantities. The base in the interstitial fluid, which is normally ninety per cent sodium, will increase to be almost entirely composed of sodium. The exact reverse of this phenomenon can occur with excessive excretion of sodium in which a general loss of fluids will result. Both these states can be produced by a hyperactivity or a hypoactivity of the adrenal cortex hormone.

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too late. I had learned to hate him. And I really had nowhere to go. I had much freedom in the day time and I used it all out. The child didn't bother me much. What I could never get, in those early years, when the youngster was still a baby, was the pleasure of going out together with my husband. I longed for that. Of course, by and by I forgot it. On a Sunday, yes, but it was with the baby and motherhood weighed heavily upon me. I wanted to be a girl again and forget the child. To be like two lovers, my husband and myself, and laughing, dancing, spend our time lightly! No, this was not to be. And this unfulfilled desire was like the first crack in one of my earthen pots—ominous, sure to go on until it will break it completely. And it did. To separate? To divorce? I cannot do it. I am too much of a coward. And I could not face my family. Let him start it, then I'll only be too glad. Why I do not take a lover? Oh, doctor, how can you say that? I would never enjoy it. It would only free my husband. Why don't you make this suggestion to him? How I wish he would follow it! This means that I still love him? Oh, you make me laugh! Oh, you have never met him? I'll send him to you, you know, on one of his bad days. You ought to see him. Sometimes I actually think he'll go mad. Of course, I know, Doctor, you'll not give him the advice you give me. But he needs you. He is not crazy yet, but he is no longer sane."

And now he has come. He had an awful night, he said. "One of those nights that made him doubt whether his mind would survive," he added.

"I see the abyss in front of me. I am falling into it, doctor. It is coming! I'll be alive, but the chief things in me will be dead. I get such funny notions, such weird thoughts."

And he told me about last night's quarrel.

He had not had any sex relations for months. They always slept separately. Last evening he happened to be home and she seemed to be somewhat accessible. But later she demurred. She was adamant. And she taunted him with all kinds of humiliating words. He was a sexual weakling anyhow. And who would believe him that he had no other woman? Would he stay so long without intercourse? That she did not permit it was no excuse. A real man would take her by force. And she invited him to do it, she dared him use violence.

He could not sleep the whole night. He walked the floor, he cried into the pillow until five in the morning, while she did not mind it and snored serenely. At six his

alarm-clock woke him up and he went to work. But at ten in the morning he had to quit—and he came to my office.

It was too late to improve the damage done. The rent was too deep and painful and beyond repair.

Perhaps this marriage was doomed before it was consummated. But he had committed the mortal sin of neglecting her for the benefit of his movement or cause in those first sensitive years. No man, no woman can forgive lack of attention, nobody wants to be superseded by some other interest. Now they had both harmed each other—she in a more venomous way, he in a more polite form—and they had acquired the habit of biting and scratching. War!

As he was more the victim and his mental health was really threatened, it was necessary to make him understand, not only his mistakes, but her tactics as well, and to teach him how to take her attitude philosophically. Also, if he did not think that the lack of intercourse was damaging to him, which he had confessed he feared—as a result of his reading all sorts of exaggerated theories—he would be quieter. If he were less eager to possess her bodily and more attentive to her from another standpoint, she might begin to desire a contact. Of course, he needed the sexual satisfaction, but he could stand its absence better if he were not afraid of imaginary effects. It was probable that, if conditions should not change, he would, sooner or later, find an outlet in some other woman's company. But it was not my business to suggest anything along those lines.

After all, no one could be absolutely certain that even his wife might make some concessions and that a *modus vivendi* might be re-established, if he were able to appear unconcerned at her big attacks or little pricks and if he could really relinquish many of his activities. The problem of caring for the child in the evening should be solved. For a small sum a person might be left with the boy once in a while and the patient might try to be nice to his wife in a new fashion or rather going back to their wooing period. He ought to make an attempt to be somewhat less serious, less oldish, and more prankish. If possible, he should enlighten his wife in his ideas, interest her in his public work and make her share it, so that she should become his partner and companion.

He would have to inform me frequently about his progress and come for encouraging conversations and perhaps for sources of inspiration to be tapped on his road of conquest of his own wife.

In these cases, as in the first group, symptoms reappeared promptly upon withdrawal of the medication

Summary

Notice is taken that both vasomotor rhinitis and atrophic rhinitis are extremes approaching the pathologic in a normal physiological variation in fluid content of tissues. An attempt is made to explain this variation on electrolyte control, especially of sodium. Evidence is cited

for the adrenal cortex hormone being the regulator of body sodium. Evidence is also cited on the effect of sodium on cell membranes, altering their permeability. This fact is employed to interpret the allergic states often associated with vasomotor rhinitis. Therapy with the aim of forcing chemical change in the electrolyte pattern of body fluids on cases of vasomotor and atrophic rhinitis appear to support the view that fluid and sodium balance is the underlying cause for these clinical entities. I NEVINS ST

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BETWEEN MENTAL HEALTH AND MENTAL DISEASE

B LIBER, M.D., D.R.P.H., New York City

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I don't repel him, that is at first. I don't. But when he is all heated up, I don't allow him to come near me. Then I feel good. He is mad, mad, and I laugh inwardly. I fear him too. I fear he might strike me, although I should like that to happen. I almost invite him to do it, I provoke him. He, however, remains the same gentleman even then. Finally, I am the one who is licked. If he'd at least threaten me—I'd have an excuse to go crying before his friends, and accuse him. Yes, he has some reputation in his circle. He is quite a leader among his people and very active. What do I say, active? He is sincere and devoted. He'd give his life. There's the rub. That's what I can't stand. I can't make it out, but somehow that's the real cause of the trouble. The whole thing started with this—with his spending his evenings at meetings and in committee work. He enjoyed it and gave himself to it while I felt that I got only the crumbs. When I finally protested and said that I too wanted to go somewhere in the evening, he immediately made arrangements to stay at home with the child on such nights. But it was

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As he was more the victim and his mental health was really threatened, it was necessary to make him understand, not only his mistakes, but her tactics as well, and to teach him how to take her attitude philosophically. Also, if he did not think that the lack of intercourse was damaging to him, which he had confessed he feared—as a result of his reading all sorts of exaggerated theories—he would be quieter. If he were less eager to possess her bodily and more attentive to her from another standpoint, she might begin to desire a contact. Of course, he needed the sexual satisfaction, but he could stand its absence better if he were not afraid of imaginary effects. It was probable that, if conditions should not change, he would, sooner or later, find an outlet in some other woman's company. But it was not my business to suggest anything along those lines.

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In these cases, as in the first group, symptoms reappeared promptly upon withdrawal of the medication

Summary

Notice is taken that both vasomotor rhinitis and atrophic rhinitis are extremes approaching the pathologic in a normal physiological variation in fluid content of tissues. An attempt is made to explain this variation on electrolyte control, especially of sodium. Evidence is cited

for the adrenal cortex hormone being the regulator of body sodium. Evidence is also cited on the effect of sodium on cell membranes, altering their permeability. This fact is employed to interpret the allergic states often associated with vasomotor rhinitis. Therapy with the aim of forcing chemical change in the electrolyte pattern of body fluids on cases of vasomotor and atrophic rhinitis appear to support the view that fluid and sodium balance is the underlying cause for these clinical entities

1 NEVINS ST

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EDITORIALS

Endorsement of Foreign Licenses

Section 1259 of the Medical Practice Act of New York contains a provision that "the commissioner of education may in his discretion on the approval of the board of regents endorse a license or diploma of a physician from another state or country," provided that all professional qualifications have been met and if, after ten years of practice, the applicant has attained a position of authority in his profession

No other state in the union permits one to practice medicine unless he shall have passed the prescribed examinations given by the board of medical examiners. Exceptions are made only where reciprocal relations have been established between the separate states and in the event of physicians employed in the Federal services. New York State, however, which contains the port of entry for the largest number of immigrants, has been more lenient toward the newly arrived professional men, and has facilitated their entry into the active practice of medicine.

With the sudden influx of physicians and other members of the allied professions which was occasioned by the political and social upheaval in Germany, there developed a strong sympathy among the practicing physicians of our State to aid these refugees and do all in our power to help them get a fresh start. Had these

immigrant physicians distributed themselves evenly throughout the country their number would not have been noticed and they would have made welcome additions to the several communities in which they would have settled. The requirements for obtaining a license to practice medicine elsewhere than in New York, where it could be granted by an endorsement of credentials, kept the greatest proportion of them here. This has led our Board of Regents to pass the ruling that upon applications filed after October 15, 1936, no license issued in a foreign country will be endorsed until the applicant shall have passed the licensing examinations.

This resolution will receive the wholehearted endorsement of the profession of this State. Many rumors have reached the ears of the officials of our Society concerning abuses which have arisen in connection with the licensing by endorsement. The practice of medicine in this State should be kept at the high level it has always maintained and no opportunity should be given for the lowering of these standards.

Valuable Information

The survey of consumer purchases that the U S Bureau of Labor Statistics is conducting in conjunction with the Federal Bureau of Home Economics should

throw a revealing light on the relationship of medical expenses to family income and expenditures. Instead of condensing the figures obtained into a deceptive average, the investigators will analyze them according to geography, income, and occupation. In every regional group under consideration, for example, subclassifications will be made into thirteen income brackets, eleven types of family composition, and seven occupational divisions. This will give a far truer picture of the economic aspects of medical care for the general public than spurious averages which embrace unemployed and millionaires.

Business—large and small—is supporting the survey because of the invaluable data it will furnish on consumer needs, tastes, and ability to spend. There are equally cogent reasons for the profession to support it since many important factors governing disbursements for sickness will be brought to light. According to the *J.A.M.A.*, an effort will be made to learn "the relation of family expenditures for medical care to expenditures for other specific goods and services," how this relationship varies with the size of the income, how occupation, size of family, and amount of earnings influence the selection of the type of medical care and "how expenditures differ among urban and rural families *** This should make it possible to learn who calls on the services of physicians, dentists, ophthalmologists and other specialists, who visit clinics ***" No outlay for any phase of medical care will be overlooked.

From the point of view of professional policy, it is extremely important that the medical data for each group will be presented in relation to outlays for food, clothing, shelter, recreation, education, and other purposes. This prevents the distorted perspective that comes from isolated examination of the costs of medical care without consideration of income and expenditures for other causes.

So far, field workers have encountered unexpected cooperation from those interviewed. The frank and full data obtained

as a result adds immeasurably to the value of the survey. Physicians, who stand to acquire information of genuine importance to their profession, should not hold back if they are called upon to cooperate in this project.

Real Health Examinations

Another school year has started and thousands of youngsters all over the state have had their first taste of the periodic health examination. Unfortunately in certain localities conditions are not such as to leave a very strong or favorable impression. When a school physician is required to go over forty or fifty children an hour, the examination cannot be very thorough. Superficiality not only defeats the purpose of the law requiring annual health certificates from school children but imbues the latter with scorn for the whole proceeding.

It is obvious that the family doctor is better qualified to pass on the health requirements of a child he has known and repeatedly examined than a strange physician who sees the youngster among hundreds of others and has time for only the most cursory inspection. The private practitioner is familiar with the home environment and appreciates hereditary factors and personal idiosyncrasies. Naturally he knows what emphasis to place on slight anatomical abnormalities and physiological aberrations. No matter how competent, the school physician is at a disadvantage in this respect. He has a single, brief opportunity to observe and cannot be blamed if he fails to evaluate or interpret his findings correctly.

It should not be difficult to make the family physician the universal school examiner. Even if parents are unable to pay, there is no reason why the child should be shunted to a strange practitioner. The schools must pay their examining physicians for admittedly unsatisfactory results. For very little more they could have every pupil examined by his own doctor and a system of real health examinations in force.

There is nothing utopian in this principle. It has worked successfully in emergency home medical relief. It is again proving its practicability in Workmen's Compensation. Individual school districts that have tried it are well-satisfied with the results. County medical societies should take the initiative in a drive to make it a universal practice.

Marijuana

The rapid increase in use within recent years of the narcotic drug marijuana has created a state of alarm among police officials and psychiatrists because of the augmentation of the already large number of drug addicts. Properly designated as *cannabis indica*, its effects were known to the ancients who termed it hashish. Unlike cocaine, morphine, and heroin, the user of marijuana rarely becomes an addict in the true sense of the word. There are no withdrawal symptoms upon discontinuing its use and no immediate after-effects follow the narcotic state induced by it.¹

In this country it is used in the form of cigarettes commonly called "reefers." It produces euphoria, flighty speech, and a sensation of a keen intellect. Visual hallucinations accompany a marked erotic stimulation. A profound disturbance of time perception makes the subject feel that minutes are hours. Constant and oft-repeated use of marijuana brings about a psychotic state which closely resembles a mixture of the schizophrenic and cyclothymic states.

The chief danger in the use of the drug lies in the release of whatever aggressive or sexual impulses may have been dormant in the individual user. In New York City many prisoners admit of its use and yet many of these had committed no crime prior to smoking the "weed." So important has the eradication of marijuana addiction become that the New York City police have under-

taken the destruction of tons upon tons of the plant deliberately cultivated in back yards and vacant lots. But the far-reaching import of this problem warrants more than local consideration. The Federal Narcotic Law which at present does not include marijuana in its scope, should be amended to the end that the use of this drug can be entirely wiped out. Fortunately this can be achieved since "reefer" smoking does not make an habitué of the user.

CURRENT COMMENT

DR. ALBERT EINSTEIN, speaking at the convocation of the University of the State of New York, among other things stated that "Darwin's theory of the struggle for existence and the selectivity connected with it has been cited by many people as authorization for the encouragement of the spirit of competition. In this manner some people have also tried to prove, pseudo-scientifically, the necessity of the destructive economic struggle of competition between individuals."

"But this is wrong," he continued, "because man owes his strength in the struggle for existence to the fact that he is a socially living animal ***"

Speaking on "Some Thoughts Concerning Education" Dr. Einstein mentioned the potential dangers of individual ambition. He said "Desire for approval and recognition is a healthy motive, but the desire to be acknowledged as better, stronger or more intelligent than a fellow being or fellow-scholar easily leads to an excessively egoistic psychological adjustment which may become injurious for the individual and for the community ***"

Dr. Einstein stressed the importance of independent thinkers, and went on to say that "The school should always have as its aim that the young man leave it as a harmonious personality, not as a specialist. *** If a person masters the fundamentals of his subject and has learned to think and work independently, he will surely find his way, and in addition will better be able to adapt himself to progress and changes than the person whose training principally consists in the acquiring of detailed knowledge. *** The development of general ability for independent thinking and judgment should always be placed foremost, not the acquisition of special knowledge ***"

IN THE *Health News* of October 12, issued by the State Department of Health at Albany we find a summary of the health conditions in New York State for August 1936 ***During the month of August, New York State experienced the lowest death rate on record (9.3 per 1,000 population) The infant mortality (37 deaths under one year per 1,000 live births) was the lowest ever recorded in August, only once before was the infant mortality lower in any month (36 in September 1935) The maternal mortality (43 deaths per 10,000 total births) was lower only once in the last fourteen years ***"

"IT RESTS WITH the medical profession, after all, to stop this step toward state medicine Through their constant association with hospitals, public and private, they are in the best position to say where costs can be reduced without sacrificing the quality of service.

"The strength of the demand for state medicine lies chiefly in the fact that medical costs frequently are beyond the means of patients who are entirely willing to pay to the limit of their ability As long as this condition obtains, the public is going to listen sympathetically to any proposal which promises to correct the situation.

"Physicians are enthusiastically enrolled against state medicine, but the public needs more than a phrase to realize the danger in the proposal ***"—From an editorial in the *San Diego* (California) *Union*

"***THERE ARE DIVERGENT philosophies of social evolution and antagonistic theories as to the proper function of the State in fostering the new or preserving the old patterns of social life—and medicine as a profession, jealous of its achievements and alive to its destiny—must examine these theories and philosophies and consider their respective consequences in the light of the public interest as viewed by the profession and of the profession's own peculiar needs as well"—*Westchester Medical Bulletin*

"HAVE WE COME OF AGE A HISTORIAN WONDERS" is the title of a thought provoking article by James Truslow Adams in *The New York Times Magazine* of October 18, from which we quote several parts ***The question whether as a people we have come of age is not merely a fanciful one. It has a practical import. If we suddenly find that affairs of the utmost importance to us

have to be transacted for us by a particular person, we are at once interested to know whether he is young or mature in experience and character *** We are not frontiersmen living solitary on a clearing, wholly independent of others What the nation is and does is of supreme importance to us, spelling comfort or penury, life or death, as history, unrolling before us over the whole earth today, indicates all too clearly Affairs of the utmost importance suddenly have to be handled for us by some one else—the nation Hence the maturity or immaturity of the nation takes on new interest."

Professor Adams looks about him and notes many signs of our immaturity—in our waste of the soil and forests, in the "lack of dignity or seriousness which marks our large gatherings, from class reunions to national political conventions" He questions whether we have "the firm character of maturity or merely the adaptability of youth" and concludes that American character is still "unformed and in the making"

The interesting article ends with the statement "Our nation, which is the sum of its citizens, seems still to me to be unformed, and until, through the development of its citizens *** it shall have come of age, no man can say what the future America will be."

"ECONOMIC UNCERTAINTY, produced in part by the withdrawal of donations and bequests because of high taxes, is demoralizing surgical work in American hospitals, the American College of Surgeons was told *** as it began its annual Congress. The statement was made by Dr Frank E. Adair, executive officer of Memorial Hospital, New York, at the hospital standardization conference of the Congress ***

"Dr Adair, after pointing out that many small hospitals had gone into bankruptcy, said 'Recently I noted that a distinguished American had died leaving an estate of between \$8,000,000 and \$9,000,000 His will, written a few years ago, directed that donations be made to eighteen charitable institutions A codicil to the will recently executed during the present years of the depression, stated that "because of the high estate taxes imposed by the Federal and state governments," it had become necessary to revoke the donations amounting to approximately \$1,000,000

'This practice has come to be a common occurrence. More such codicils have actually been attached to wills during the last

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DR. ALBERT EINSTEIN, speaking at the convocation of the University of the State of New York, among other things stated that "Darwin's theory of the struggle for existence and the selectivity connected with it has been cited by many people as authorization for the encouragement of the spirit of competition. In this manner some people have also tried to prove, pseudo-scientifically, the necessity of the destructive economic struggle of competition between individuals."

"But this is wrong," he continued, "because man owes his strength in the struggle for existence to the fact that he is a socially living animal ***"

Speaking on "Some Thoughts Concerning Education" Dr. Einstein mentioned the potential dangers of individual ambition. He said "Desire for approval and recognition is a healthy motive, but the desire to be acknowledged as better, stronger or more intelligent than a fellow being or fellow-scholar easily leads to an excessively egoistic psychological adjustment which may become injurious for the individual and for the community ***"

Dr. Einstein stressed the importance of independent thinkers, and went on to say that "The school should always have as its aim that the young man leave it as a harmonious personality, not as a specialist. *** If a person masters the fundamentals of his subject and has learned to think and work independently, he will surely find his way, and in addition will better be able to adapt himself to progress and changes than the person whose training principally consists in the acquiring of detailed knowledge. *** The development of general ability for independent thinking and judgment should always be placed foremost, not the acquisition of special knowledge ***"

Correspondence

[THE JOURNAL reserves the right to print correspondence to its staff in whole or in part unless marked 'private'. All communications must carry the writer's full name and address, which will be omitted on publication if desired. Anonymous letters will be disregarded.]

468 Delaware Avenue
Buffalo

To the Editor

In the editorial columns of the New York State Medical Journal for September [Sept. 1, page 1260] an article appeared on anesthesia which has aroused quite a bit of criticism, not only against the New York State Medical Society, but against our Society, "The American Society of Anesthetists," in that professional physician anesthetists and their work are given no recognition or support by the Journal of the New York State Medical Society.

Inasmuch as we have nearly 150 members of our Society who are paying dues to the New York State Medical Society, it seems but fitting that they should have the support of our State Society and their work should not be hampered by such editorial comments. In the future it seems but fair that any article on anesthesia should be submitted to the American Society of Anesthetists so that unjust and harmful statements be not printed. The author of this article does not seem to know the details of a good anesthetic practice or of the advances in the science and art of anesthesia we are trying to make possible.

I am enclosing a copy of a decision by the Bureau of Professional Licensing of the Commonwealth of Pennsylvania also reprint of an article which I read before the Erie County Medical Society in March

1936, and copy (uncorrected) which I am to read at Philadelphia October 20th before the American College of Surgeons.

Hoping some retractions of statements in this article can be made and anesthetists will be properly supported as members of the New York State Medical Society, I remain

Very truly yours,

L F ANDERSON, M.D.,

Chairman Special Committee
Erie County Medical Society
and

Member Legislative Committee,
American Society of Anesthetists
Chairman Special Committee,
New York State Anesthetists

October 13 1936

Note Obviously we would not submit editorial manuscript to any one other than our own Board. Our duty remains to interpret and comment upon policies regarding medicine and medical practice which have been adopted by the House of Delegates of our Society, its officers and committees. In this sense only do we express opinions. We call our correspondent's attention to our editorial statement *At the last meeting of our State Society a resolution was adopted the general purport of which consisted of seeking legal means to curb the administration of anesthetics by nurses*. Incidentally we reviewed the rise to favor of the nurse anesthetist. By no stretch of imagination did we condone this rise to favor. Perhaps a repudiation of the editorial in question will permit Dr L F Anderson to show us what he would have us retract. We assure Dr Anderson that the writer knows good anesthetic practice, and is fully aware of all advances made in this practice, since he is a practicing surgeon.—Editor

MEDICAL RADIO BROADCASTS

The Medical Information Bureau of the New York Academy of Medicine announces the following broadcasts from Station WABC and the Columbia Broadcasting System network.

Thursday, Nov 5, 1 30 P.M.—*Speaker* Dr Guilford S Dudley, Director of Second Surgery Div. *Subject* "Cancer is Curable."

Thursday, Nov 12, 1 30 P.M.—*Speaker* Dr Walter T Dannreuther, Professor of Gynecology and Director of Department New York Post Graduate Medical School and Columbia University. *Subject* "The Education of the Doctor."

Thursday, Nov 19, 1 30 P.M.—*Speaker* Dr Charles E. Farr, President of the Medical Society of the County of New York. *Subject* "Appendicitis."

NEW YORK DIABETES ASSOCIATION

The November clinical meeting of the New York Diabetes Association will be devoted to the timely subject of protamine insulin. It will be held on November 13, at

8 30 P.M., in Room 20, New York Academy of Medicine. Papers will be presented by H Raule Gevelin, M.D., H O Mosenthal, M.D. and Howard F Root, M.D.

five years than have been added in the previous fifty years. But what has this to do with the subject under discussion? It is exactly this. Anything having to do with the stability of hospital income has both a direct and indirect influence on the work of the surgeon. Any uncertainty as to the ability of the hospital to meet its budget and continue its function has an enormous bearing on the quality of his work in a hospital. If you question this statement, examine for yourself the professional demoralization that took place in any one of the bankrupt hospitals before it closed its doors ***

'The public-spirited citizens who under normal conditions would like to be generous with hospitals have been made so uncertain as to their future that they cannot and are not running the risk which great liberality entails today. Uncertainty is probably the greatest single reason for our hospitals being in the unhappy condition

in which they now find themselves. Most hospitals find that their endowments have suffered a body blow. Bonds and other investments in the so-called legal securities are found dashed on the rocks of default, the income in some instances having greatly diminished or ceased altogether.

'As the depression has continued so many years, many people with modest means, formerly independent, have at last found themselves at the end of their capacity to pay for hospital service. The sick unemployed have crowded into the hospitals at alarming rates. Worry, inanition and their resultant sickness and disease have heaped a tremendous over-load on our hospitals. The government has seen fit for some curious reason to disregard this added burden of our hospitals. The government will give a man a job, but will not pay for his care when he gets sick.'—The foregoing has been taken from *The New York Herald Tribune* of October 19

INTRIGUING "KINKS" OF CARD SENSE

A clever skit by the chairman of the membership committee on poker hands and county society membership appears in an esteemed

Brooklyn contemporary which, by a slip of the types, carried this title across the top of the page

BULLETIN of the Medical Society of the County of Kinks

This particular kink runs thus

Card Sense

FOR THE SPECIAL BENEFIT OF SOLITAIRE PLAYERS

Not all physicians are accomplished card players. Many doctors can't tell a king from a jack or a heart from a club.

Some excel in bridge or pinochle, others in poker.

Some play golf, others are fine anglers.

Some paint or draw, others are recognized sculptors.

Each should have a hobby because the everyday grind is enervating.

Coming back to poker, here's a swell hand—

♥A—Membership card in your County Society

♥K—Membership card in your State Society

♥Q—Membership card in the A. M. A.

♥J—Membership card in the Library Association.

♥10—Membership card in a Special Section or Society

In Texas, men have been shot for holding five aces. Our doctors in Kings County holding this hand are up front.

For further information 'phone STerling 3-6900, ask for Miss Wightman.

Harry Meyersburg, M.D.,
Chairman, Membership Committee

More than twice as many children under fifteen are killed by accidents as by three common communicable diseases—measles, scarlet fever and diphtheria—a study of childhood fatalities by the United States Public Health Service discloses.

For children under one year old, mechanical suffocation leads the list of fatal accidents. At one and two years burns cause most fatal accidents. Automobile accidents, and burns lead at three years.

At four years, and from then up to fifteen, automobile accidents rank first as cause of accidental deaths and also outnumber deaths from the three diseases.

In the study, reported by William H. Gafaeer, senior statistician of the health service, the country was divided into three geographic areas.

The Northeastern region had most childhood automobile deaths per hundred thousand children.

of individuals, they decry special skills, they substitute rhetoric for reason. So we have another obligation, just as basic as the medical obligation, and that is a social obligation. We must reach out and interest ourselves in these questions which are quite outside medicine, but which need a generous skepticism to counteract what often seems to be a pathological optimism. We have not repaid our debt to society when we merely heal the sick. In some respects, the well need healing, too. That is to say, if we are not to have all our values, all our superiorities broken down. "One man," Mr. Dooley said, "is not only as good as another, but a damned sight better." There are no experts left. There are only simplifiers. And what are we doing about it?

This is not a matter of partisan party lines. The same kind of thinking is to be found everywhere. The public is coming to believe that it is capable of exercising its opinion, its judgment, on difficult technical problems, with no knowledge, no experience. Further than this, it expresses that opinion in response to a catch-word. It does not even make the effort to think a problem through on a rational basis, using the information, however inadequate, which

it has in its possession. These are symptoms of grave danger. Sooner than we think, we may see the complete triumph of mediocrity. And there is only one way in which we can make effectual remonstrance, and that is at the polls on election day. Yet I am told by those who have made inquiry that the proportion of doctors who vote is only one in three. Need I say that this is a disgraceful record? Need I urge you to consider its significance deeply, when so many public policies are formulating which may advance or retard the healing art? You know what various candidates stand for, and in general, if not specifically, what type of legislation may be expected of them. Your knowledge, your judgment, is ineffectual unless you vote.

After you have asked yourself why you are a doctor, ask yourself another question, a larger question. Are you a citizen, in fact rather than in name, if you fail to exercise the obligations of a citizen in exchange for its advantages? If we work in our own societies to preserve the integrity of medicine but fail in the larger society of American affairs to preserve the integrity of our civilization, efforts on the one part may easily be frustrated by inaction on the other.

A MEDICAL MAN'S PRAYER

President Samuel E. Harmon, of the South Carolina Medical Association, died before the state meeting when he was to deliver his presidential address, but "with characteristic foresight," says his state journal, he had completed the address, which is published in its pages. At its close we find this impressive passage:

The following is a Sunday Morning Prayer composed by Lieutenant Colonel Clayton E. Wheat, former chaplain of the Military Academy, West Point, that I have transformed to fit our profession.

"Oh God our Father, thou searcher of men's hearts, help us to draw near to Thee in sincerity and truth, may our religion be filled with gladness and may our worship of Thee be natural.

"Strengthen and increase our admiration for honest dealings and clean thinking, suffer not our hatred of hypocrisy and pretense ever to diminish, encourage us in our endeavor to live above the common level of life, make us to choose the harder right instead of the easier wrong, and let us never be content with a half truth when the whole can be won, endow us with courage that is born of loyalty to all that

is noble and worthy, that scorns to compromise with vice and injustice and knows no fear where truth and right are in jeopardy.

"Guard us against flippancy and irreverence in the sacred things of life. Grant us new ties of friendship and new opportunities of service, kindle our hearts in fellowship with those of cheerful countenance and soften our hearts with sympathy for those who sorrow and suffer. May we find genuine pleasure in clean and wholesome mirth and feel inherent disgust for all coarse minded humor. Help us in our work and in our recreation to keep ourselves physically strong, mentally awake, and morally straight, that we may thus better maintain the honor of our great profession untarnished and unsullied and acquit ourselves like men in our effort to realize the ideals of our noble profession in doing our duty to Thee and to our country, all of which we ask in the name of the great friend and master of men. Amen."

Let us live not for ourselves alone and the present, but for the greater and more intelligent life of the future, not for myself but for the truth that in life I have spoken. Not I, but the seed that in life I have sown shall pass into the ages. All about me shall have been forgotten save the truth that I have spoken, the things I have done.

Why Am I a Doctor?

FLOYD S. WINSLOW, M.D., Rochester
PRESIDENT, MEDICAL SOCIETY OF THE STATE OF NEW YORK

Why am I a doctor? Did you ever ask yourself this question? Perhaps it will not be amiss, once in a while, if we examine this basic question. It will be good for us to indulge in what might be called a "periodic self-examination."

Certainly we are not doctors because of the money that is in it. Generally speaking, our companions of early years who selected business pursuits have outstripped us in gathering together the collection of objects which represents monetary success. Why did we go into medicine? Why do we stay in medicine? Why do we live for, fight for, and sometimes die for medicine?

Glory? Where is the romance in our pursuit, for those who follow it? It is said that every ship is a romantic object but the one we are sailing in, and it may also be said that medicine has romance for those who do not practice it. We work in the quiet of the sick room, or the hospital, we walk daily with troubled humanity. Our satisfaction can only derive from the knowledge that we have performed our obligation to heal the sick, in this way paying the debt we owe for the accumulated knowledge and experience of the ages which has been made available to us.

Perhaps this feeling of responsibility is an ideal which we do not always reach, but is it any less our ideal? We can say, without fear of contradiction, that the great majority of doctors are imbued with the purpose to discharge this obligation. And I think the time has come when the public should know, should be definitely told, that the most important thing it should inquire about, when selecting a doctor, is whether he is genuinely interested in his calling, loves his profession, and is not only intent to attain ability as a physician, but feels a responsibility to advance the capacities of the medical profession as a whole. This is, as you know, the main object of medical societies. The man who has such a goal as this in mind as a destiny, is a man who can be fully trusted with the lives of men and women and children.

I will go even further than this and say that I think I stand here facing a group of men who have stood the test of this criterion, in other words, this test of character. You have joined your county medical society. You consider that when you were given the right to practice medicine, you assumed an obligation to do your part to see that medicine, as a profession, preserved its integrity. Now gentlemen, the only way integrity can be attained or retained, is to work for it. When you join your local medical society you work for the integrity of yourself and the group. You render yourself open to the criticism of your peers. You say, in effect, "I intend to behave myself, to put the interest of my patient above my own, to observe all the other provisions of the oath of Hippocrates, in letter and in spirit. And not only do I intend to do this, but by joining the county medical society *I have to do it*—I lay myself open to penalties if I do not."

I think the public should be told that a doctor who is a member of his county medical society is a better doctor on this account. I think a patient should ask his doctor, if he is not a member of the medical society, why he is not a member. It is possible, of course, that a physician may be of the highest rank, and not be a member, there is nothing compulsory about it, but as I go over in my mind the names of the physicians whom I find have lived so that their excellence is beyond possible question, I do not think I can name one who is not a member of his county medical society.

Now if our loyalty to our profession is merely another form of loyalty to society—to mankind—a point comes up which I wish now to mention. The world today is facing deep and important problems. Confusion abides in the minds of men. Quacks are abroad plying their trade in the realm of economics and sociology as well as in that of medicine. Large groups of people are assuming to know that which they do not know. They are contemptuous of the experience of the past, and of the experience

Address delivered at meeting of the Eighth District Branch, Medical Society of the State of New York, Buffalo, October 15, 1936

DISTRICT BRANCHES

First District Branch

That interest in case work, clinically presented in hospitals, is always alive and of prime importance in the minds of practicing physicians was proven again by the excellent attendance on October 7, at the thirtieth annual meeting of the First District Branch which comprises the counties of Bronx, Dutchess, Putnam, New York, Orange, Richmond, Rockland, and Westchester. The program consisted exclusively of clinics at the Morrisania City Hospital, 168 Street and Gerard Avenue, in the Bronx Borough of New York City. No less than fourteen different phases of clinical medicine and surgery, general and special, were featured as subjects for clinical study, by members of the staff of this large municipal hospital.

The Morrisania City Hospital houses 1200 patients, and its buildings are all of recent construction devised for efficient and effectual care of those committed to its care.

This program was presented

Obstetrical Surgery, Harry Aranow, M.D., F.A.C.S. and Staff. Prolapse of Uterus

Ophthalmology, Dr. Joseph Hory. Lid Plastic for Ectropion of Left Lower Lid.

General Surgery, George E. Milani, M.D. and Staff. Part I Operations: (1) For Carcinoma of Descending Colon. (2) For Carcinoma of Hepatic Flexure. Part II Demonstrations: (1) First Stage Lahey for Carcinoma of Rectum. (2) Operation for Closure of Intestinal Fistulae.

Urological Surgery, Terry M. Townsend, M.D., F.A.C.S. and Staff. 1 Suprapubic Prostatectomy (Benign Hypertrophy of Prostate). 2 Intraprostatic Injection for G.C. Prostatitis.

Pediatrics, Louis H. Barenberg, M.D. and Staff. 1 Tension Pneumothorax following Old Empyema, Dr. W. Levy. 2 Megacolon, Dr. D. Greene. 3 Pulmonary Infiltration for Diagnosis, Dr. H. Passachoff. 4 Tetany in New Born Twins, Dr. L. Barenberg. 5 Marasmus (Aldrich McClure Tests) Dr. N. Greenstein, and Dr. L. Barenberg. 6 Prophylaxis Against Contagious Diseases with Mother's Serum, Dr. L. Barenberg.

Oto-Laryngological Surgery, Clarence H. Smith, M.D., F.A.C.S. and Staff. 1 Retrograde Oesophageal Dilatation, L. T. Perrault, M.D. 2 Tonsillectomies, C. H. Smith and staff. 3 Simple Mastoids, C. H. Smith and staff.

Pathological presentations William Aronson, M.D. 1 Two cases of Multiple Myeloma.

Neuropsychiatry, S. Philip Goodhart, M.D. and Staff. 1 Cervical Cord Tumor. 2 Anterior Poliomyelitis with Psychogenic Loose of Sensation. 3 Carcinoma of Prostate with Metastasis to Spinal Cord. 4 Sub Arachnoid Hemorrhage.

Ophthalmology, Thomas H. Curtin, M.D. and Staff. 1 Bilateral Cataract. Morris Jaffe, M.D. 2 Detachment of Retina. Morris Jaffe, M.D. 3 Retina Cyst, Joseph Hory, M.D. 4 Carci-

noma of Lid, Joseph Hory, M.D. 5 Thrombosis of Central Retina Vein, Joseph Hory, M.D. 6 Hypertensive Obliterating and Arteritis of Retina, Joseph Hory, M.D. 7 Diabetic Chorioiditis with Retinitis Proliferans, Joseph Hory, M.D.

Neurosurgery, Sidney W. Gross, M.D. 1 Chordotomy for Intractable Pain.

Radiology, Samuel F. Weitzner, M.D. 1 Demonstration of Unusual X-Ray Films.

Surgical Diabetes, Part I Lecture on Diabetic Management of the Surgically Complicated. Frederick W. Williams, M.D. Part II Presentation of five cases of Diabetic Extremity Lesions with Discussion of Criteria and technic for amputation. Thomas J. O'Kane, M.D., F.A.C.S.

Radiation Therapy, W. Harris, M.D., Part I Role of a Tumor Clinic in a General Hospital. Part II Case Presentations: 1 Carcinoma of the Skin. 2 Carcinoma of the Oral Cavity. 3 Carcinoma of the Esophagus. 4 Carcinoma of the Breast. William Harris, M.D. and Samuel Richman, M.D.

Cardiac Edward Flood, M.D. Interesting Cardiac Cases.

Skeletal Surgery, William Klein, M.D., F.A.C.S. Treatment of Fracture of Femur.

Obstetrical Harry Aranow, M.D., F.A.C.S. and Staff. Part I Grand Rounds. Part II Presentation of Case—Toxemia of Pregnancy. Part III Management of the Occiput Posterior.

Particularly noticeable was the working of the Tumor Clinic.

Scientific exhibits were also shown as follows:

1 *Urological Pathology* Wax Models Courtesy of John Duff, M.D.

2 *Surgical Diabetes* Courtesy of Frederick W. Williams, M.D. and Thomas J. O'Kane, M.D., F.A.C.S.

3 *Pathological Exhibit* William Aronson, M.D.

4 *Cardiac Exhibit* Courtesy of N.Y. Cardiac Assoc.

5 *Electrocardiograph Exhibit* Edward R. Flood, M.D.

Executive Session

The following officers for 1937-8 were elected at the business meeting:

President, William C. Buntin, M.D., St. George, Staten Island. *First Vice-President*, Theodore West, M.D., Westchester. *Second Vice-President*, Alex. Selman, M.D., Rockland County. *Secretary*, Isidore J. Landsman, M.D., Bronx. *Treasurer*, Howard C. Taylor, Jr., M.D., Manhattan.

Dr. Nathan B. Van Etten, President of the Medical Board of Morrisania Hospital, welcomed the members, Dr. Peter Irving, Secretary of the State Society, spoke briefly on Society activities, and Dr. David J. Kaliski, Director of the Workmen's Compensation Committee explained details of operation of the new laws.

PROCEEDINGS OF THE EXECUTIVE COMMITTEE

In addition to minor routine business the Committee made several decisions at its regular meeting on October 8

In connection with a query from the Queens County Society as to the propriety of publication by a county society in the local press of a complete list of its members with their addresses it was considered that such a publication would be entirely in keeping with the Principles of Professional Conduct

Discussion of a suggestion from a member of the Society that the fee of two dollars for annual re-registration of the license to practice medicine be modified, it was thought impractical and unwise to seek amendment of the Medical Practice Act by which alone could change be made

The Committee on Public Health and Medical Education was authorized to contact the State Commissioner of Health for the purpose of developing a scheme for participation in the Maternal and Child Welfare provisions of the Social Security Act

Such a plan is in operation in New Jersey

A committee to confer with the State Hospital Association was appointed with the following personnel

Floyd S Winslow, Rochester, *Chairman*,
Frederic E. Elliott, Brooklyn
Thomas P Farmer, Syracuse
William A Groat, Syracuse
Augustus J Hambrook, Troy
Leo F Simpson, Rochester
Homer L Nelms, Albany
David J Kaliski, New York City

A recent resolution of the Board of Regents applying to foreign physicians was received with satisfaction

That on applications filed after October 15, 1936, no license of a legally constituted Board of Examiners in any foreign country shall be indorsed, pursuant to the provisions of Section 51 of the Education Law, until the applicant shall pass the licensing examination prescribed by law or Regents' rule.

It was understood that if an applicant has difficulty with English he must first pass the English Examination

NEW YORK HEART ASSOCIATION LECTURES

The New York Heart Association (Heart Committee of the New York Tuberculosis and Health Association, Inc) announces a series of lectures on heart diseases (Endorsed by New York Academy of Medicine) as follows Open to physicians without registration charge or admission fee

1 "Symptoms and Clinical Examination of the Cardiac Patient," Robert H Halsey, M D Tuesday, Nov 10, 1936, 4 30 P M New York Post Graduate Hospital, Erdmann Auditorium, Second Avenue—20th Street.

2 "X-ray and Fluoroscopy of the Heart," Clarence E. de La Chapelle, M D Tuesday, Nov 24, 1936, 4 30 P M Lenox Hill Hospital—Krackowizer Hall, Dispensary Building, Third Floor, Park Avenue—76th Street.

3 "Clinical Electrocardiography," Robert L. Levy, M D Tuesday, Dec 8, 1936, 4 30 P M College of Physicians and Surgeons Amphitheatre, Floor F, 630 West 168th Street.

4 "Hypertensive Heart Disease and Blood Pressure," Ernst P Boas, M D Tuesday, Dec. 22, 1936, 4 30 P M Mount Sinai Hospital, Blumenthal Auditorium, 99th Street between Madison and Fifth Avenues

5 "Cardiovascular Syphilis," Edwin P Maynard, Jr, M D Tuesday, Jan 12, 1937, 4 30 P M New York Academy of Medicine.

6 "The Heart in Thyroid Disease," Eugene DuBois, M D Tuesday, Jan 26, 1937, 4 30 P M Cornell Medical College, Room B-07, York Avenue between 69th and 70th Streets

7 "Arteriosclerotic Heart Disease," Harold E B Pardee, M D Tuesday, Feb 9, 1937, 4 30 P M New York Academy of Medicine, 2 East 103rd Street

8 "Arteriosclerotic Heart Disease," Harold E. B. Pardee, M D Tuesday, Feb 23, 1937, 4 30 P M New York Academy of Medicine, 2 East 103rd Street.

9 "Rheumatic Heart Disease," Arthur C DeGraff, M D Tuesday, March 9, 1937, 4 30 P M Bellevue Hospital, Surgical Amphitheatre, First Avenue—27th Street

10 "Rheumatic Heart Disease," Arthur C DeGraff, M D Tuesday, March 23, 1937, 4 30 P M Bellevue Hospital, Surgical Amphitheatre, First Avenue—27th Street.

11 "Treatment of Heart Disease, Including Irregularities of the Heart," Cary Eggleston, M D Tuesday, April 13, 1937, 4 30 P M Cornell Medical College, Room B-07, York Avenue between 69th and 70th Streets

12 "Treatment of Heart Disease, Including Irregularities of the Heart," Cary Eggleston, M D Tuesday, April 27, 1937, 4 30 P M Cornell Medical College, Room B-07, York Avenue between 69th and 70th streets

THE MICROBES

Two microbes sat on a pantry shelf
And watched, with expressions pained,
The milkmaid's stunts,

And both said at once
"Our relations are going to be strained"
—Indiana Division of Public Health

D Example of Typical Application Suppose we are dealing with a possible fracture of the shaft of the femur

- 1 The patient is covered with blankets
- 2 Morphine is administered, if available, under medical supervision
- 3 The foot, with or without the shoe on, is grasped firmly by an assistant with both hands placed laterally
- 4 Gentle, steady, firm traction is made in the axis of the extremity. Manual traction is maintained until splint traction is established.
- 5 While traction is being made the whole limb is slowly lifted several inches from the ground.
- 6 The half-ring splint is slipped from the outer side beneath the extremity
- 7 The side bars of the splint are placed in the median horizontal plane of the thigh so that the ring rests against the tuber ischi
- 8 The strap is buckled over the anterior surface of the thigh
- 9 The lower end of the splint rests against the body of the assistant who is still applying traction.
- 10 The ankle region is protected by cotton wadding, felt or shoe.
- 11 Traction hitch is applied, e.g., army traction strap, or muslin bandage about ankle, or adhesive plaster to leg
- 12 Traction hitch is fastened to the end of splint.
- 13 Traction is increased by Spanish windlass action, e.g., with tongue depressors and adhesive plaster, or long nail
- 14 The extremity is supported in the splint. This may be accomplished by muslin hammocks and clips applied before the splint is put on, or by bandage or triangular muslin slings after traction is applied
- 15 Lateral movement is prevented by a muslin bandage above and below the knee or by carrying a triangular sling used for support around the extremity and splint
- 16 The end of the splint is suspended to the stretcher bar or to the roof of the ambulance
- 17 A foot piece is advisable if transportation is to be prolonged.

Reference Transportation of the injured with particular reference to fractures of the extremities. Robert H. Kennedy, M.D. New York City

A complete list of exhibits follows. These were all prepared and set up by staff members of the Buffalo City Hospital as a tribute to the Eighth District Branch of the New York State Medical Society

- 1 Radiographic Demonstration of Complete Arterial System. Department of Anatomy and Radiology Buffalo City Hospital. C. R. Orr M.D., in cooperation with Eastman Kodak Company
- 2 Occupational Silicosis—Radiographic Demonstration of Various Stages of Pulmonary Changes in Occupational Dust. Department of Radiology C. R. Orr, M.D.
- 3 Bionogenic Carcinoma. Clinical Pathologic and Radiologic Aspects. Department of Pathology and Medicine. R. S. Rosedale, M.D., and D. R. McKay M.D.
- 4 Catheterization Method of Lymphoid Bronchography. Department of Radiology. G. D. Popoff, M.D.
- 5 Intracranial Pneumoencephalograms in Normal and Pathological Cases. Department of Neuro-Surgery W. B. Hamby M.D., and E. Friedman M.D.

6 Pathologic Lesions of the Tear Ducts Demonstrated by Lipiodol. Department of Ophthalmology W. F. King, M.D.

7 X-ray Films Illustrating Syphilitic Osteomyelitis. Department of Orthopedic Surgery Pio Blanco, M.D.

8 X-ray Demonstration of Foreign Bodies in the Lower Food and Air Passages. Department of Otolaryngology H. E. Bozer, M.D.

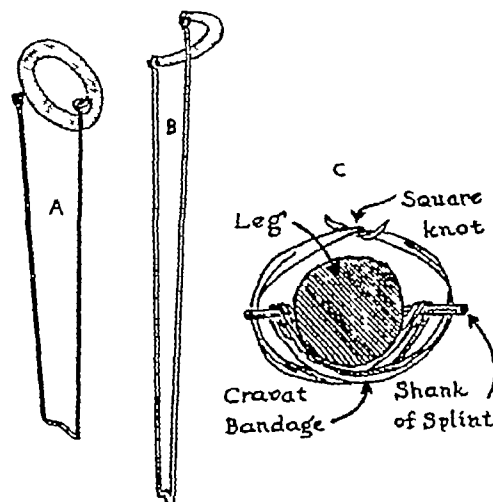


Fig 1 A. Murray-Jones Hinged Arm Splint. B. Reversible Half Ring Thomas Leg Splint. C. Supporting Bandage Tied Around Leg

9 Foreign Bodies Removed From the Lower Food and Air Passages. Department of Otolaryngology H. E. Bozer, M.D.

10 Normal Brain Anatomy. Dissections After the Method of Cunningham. Department of Neurology L. A. Marsh, M.D.

11 Clinical and Pathological Features of Brain Tumors. Department of Neuro-Surgery W. B. Hamby, M.D., I. A. Marsh, M.D. and E. Friedman, M.D.

12 Diagnosis of Lesions of the Mouth. Department of Diagnostic Medicine and Dentistry G. G. Martin, M.D., and S. W. Koepf, D.D.S.

13 A Clinical and Histopathological Demonstration of Common and Rarer Skin Diseases. Department of Dermatology R. Patterson, M.D. and H. Walker, M.D.

14 Gonorrhea. Department of Urology and Gynecology E. L. Brodie, M.D. H. A. LaForge, M.D. and A. J. Kelley, M.D.

15 Alveolar Abscess. Department of Dentistry S. W. Koepf, D.D.S.

16 Prevention and Treatment of Diphtheria. Department of Pediatrics F. J. Gustina, M.D.

16-A Recent Diphtheria Epidemic in Cheektowaga N. Y. Department of Hygiene and Public Health Medical School University of Buffalo W. S. Goodale, M.D. and F. J. Gustina, M.D.

17 Three Thousand Calorie Portions of Common Foods. Department of Dietetics. Ursula S. Senn, B.S.

18 Method of Constructing Dentures. Department of Dentistry P. Ginsberg, D.D.S., and S. W. Koepf, D.D.S.

19 Simplified Demonstration of the Principles of the Wassermann Reaction. Department of Dermatology R. Patterson, M.D.

19-A Historical Pictorial Development of the Buffalo City Hospital

20 Applied Practical Hematology. Department of Laboratories E. B. Hanan, M.D.

21 Acute Monocytic Leukemia. Department of Laboratories W. W. Jetter, M.D.

22 Circulation in the Living Kidney. Department of Anatomy, Medical School, University of Buffalo J. Graham Edwards, P.L.D.

Eighth District Branch

The thirtieth annual meeting of the Eighth District Branch was held in the Buffalo City Hospital on October 15, with the President, H Wolcott Ingham of Jamestown in the chair. An attendance of about 200 was registered.

At the morning session a medical clinic with six cases of congestive Heart Failure was conducted by Drs Allen A Jones and Abel Levitt of Buffalo. The patients exhibited different phases of origin and treatment. Dr Edward G Winkler of Buffalo showed an excellent detailed film demonstrating the technic of application of different types of forceps. Dr Francis C Goldsborough gave a brief discussion of Maternal Mortality in Erie County.

After luncheon there were short addresses by four of the State Society Officers. Dr Winslow, the President, spoke to the title of "Why I am a Doctor" (Full text will be found on page 1666 of this issue). Dr Irving, the Secretary, emphasized the readiness of the State organization to put into effect those activities of the Society which had been made the subjects of long study and this year reaching the point of action. Dr Goodrich, the President-Elect, complimented the Branch on the impulse to improve medical capacities obvious in the program and the remarkably large scientific exhibit. Dr Kaliski, Chairman of the Committee on Workmen's Compensation, mentioned problems that have arisen in the operation of the new laws, particularly with relation to arbitration of disputed bills and lifting of cases and in qualification of physicians for particular kinds of work.

In the afternoon Dr J H Donnelly, Dr D R McKay, and Dr Clifford Orr of Buffalo spoke with extensive x-ray slides on silicosis, covering clinic manifestations and radiographic diagnosis.

Dr Robert P Dobbie and associates described the working of the Fracture Clinic of the hospital. He spoke of three valuable adjuncts to a fracture clinic, a "fracture board", control radiographs, and a fracture cart. He demonstrated emergency traction for transportation with the slogan "Splint 'em where they lie" and also the procedure of making and applying moulded plaster splints, saying that "splints made to fit everybody seldom fit anybody". There followed ten cases of different fractures in each of which lay a practical lesson. The following general principles in the treatment of fractures were put forth

General Principles in the Treatment of Fractures

Emergency Treatment of Fractures Emphasizing Transportation in Traction

A Splint all fractures at the place of the accident in order to prevent the additional pain, displacement and soft-part injury that will otherwise result during the transportation of the patient from home to hospital or within the hospital.

B Indications for Use of Traction Splint

It is not necessary to make a positive diagnosis of fracture. The splint should be applied if there is any possibility of fracture between the hip joint and the foot and between the shoulder joint and the middle of the forearm. It should be used in both simple and compound fractures.

If there is a wound or if bone is projecting an antiseptic and sterile dressing, if available, should be applied before the splint is put on. If projecting bone disappears beneath the skin on the application of traction, no harm will result for such a patient requires an operative procedure as soon as possible to cleanse the entire surface of the wound. There is danger of increasing the area of contamination by the movement of fragments if traction is not applied. It is important that the one applying traction should observe if bone is projecting through the wound and report this fact to the doctor wherever the injured man is taken.

The splint should be applied wherever the patient is found, on the highway, in an elevator shaft, in the emergency room of a hospital, etc. Traction sufficient to prevent further damage should be applied before the injured man is moved.

C General Requirements of Application

There are certain standards that are necessary in the application of this general method. It does not make any difference what particular procedure is used so long as one appreciates what it is sought to accomplish.

In the use of traction there are six requirements. In the first place, there must be some adequate form of hitch, and it is necessary to protect the part beneath the hitch so that it will not be injured.

Secondly, the application of a traction hitch above the ankle or the wrist.

Thirdly, there must be some means of increasing traction by twisting so that the desired pull is obtained.

Fourthly, the extremity being in traction, it must be supported. One must not depend merely on traction for the entire support of the limb.

Fifthly, not only must it be supported from below, but lateral movement must be prevented.

Sixthly, the whole splint must be suspended in such manner that the heel will not, at any moment, rest on the ground, the floor of the ambulance, or elsewhere.

Historical Article

A HISTORY OF MEDICINE IN THE STATE OF NEW YORK AND THE COUNTY OF MONROE

FLORENCE A. COOKSLFY, B A, M A, *Rochester*
Librarian, Rochester Academy of Medicine

FOREWORD

Readers of this history are asked to bear in mind that it has not been written by one of the medical profession nor by the usual layman interested in the development of medicine but by a medical librarian and for that reason, a particular bias in favor of the medical man is evident. This possible error would be found, no doubt, in whatever a medical librarian might write of the profession, for those in daily contact with many physicians appreciate the high ethical deportment and the splendid character of these men of science to a greater degree than is possible with the less enlightened public.

The information contained in these pages has been gathered from the historical books in the various libraries of Rochester and other cities, from files of old newspapers, from transactions of State Medical Societies, and from the minute books of local

Medical Societies that are in the possession of the Rochester Academy of Medicine. The last named sources are the most interesting and here the reader sees the applicant for membership enter the Medical Society, reads abstracts of his prepared papers, his discussions or remarks during the meetings, sees him elected to office and last of all, reads resolutions regarding the loss the Society has suffered in his death. He seems so alive during the years through which his name appears upon the minutes, that he becomes another friend in the medical ranks and then with his passing, gives the reader-friend a sorrowing heart. Thus the interest and pleasure in reading these old records is ever tempered with sadness and adds still more to the deep admiration of the fineness of the profession felt by the medical librarians.

INTRODUCTION

The story of medicine is as fascinating as any part of history. The picture of suffering only slightly relieved or even increased by the ignorant healer of those very early days, using traditional rites, charms and nostrums, and crude surgery, gradually fades into one of struggle against ignorance and an attempt upon the part of pioneering medical men to relieve suffering and to extend life. We can feel but admiration and respect for the early practitioner traveling over bad roads to carry his healing art to the distressed. His medical knowledge was derived mostly from experience and many patients suffered from his unskilled but well meant efforts. He never rested. At night he was called out, hitching his weary horse by the light of a lantern, climbing wearily into the hard seat of his crusted buggy, and setting forth into the black night to ease a tortured mother or to save a dying child. His remuneration poorly repaid his hard work and his end-

less hours

Later we see him in the nineteenth century, struggling in his poverty to obtain a medical education, then cheerfully establishing himself in a district abounding with potential patients who soon demanded his help and comfort day and night. Few of these physicians became wealthy but they were generally loved and respected. Whereas in the early days the clergy attended the sick as well as the sinner, when the physician came forth, often religious consolation was demanded of the doctors. Into his willing ear is poured the sorrows of a suffering world and his kindly sympathy is understanding and healing.

We picture the doctor of today, not as a man worn by uncomfortable travel over unpaved roads but as one equally tired by the demands of the ill of today. His hours in an eight-hour-day world, are from twelve to twenty-four daily. He is "on call," at anyone's need, too often at anyone's whim.

23 *Mycetoma. A Report of a Case of Maduromyosis with the Mycology Report on the Isolation and Identification of a New Species of Madurella* From the Laboratories of the Buffalo City Hospital and Department of Hygiene and Public Health, Medical School University of Buffalo E. B. Hanan, M.D. and S. Zurett, B.S., M.T.

24 *A Simple, Inexpensive Laboratory for Every Physician* Department of Laboratories, Buffalo City Hospital Margaret Moore, Trained in Medical Technology

24 *A Preliminary Report on Animal Experimentation Regarding Dangers of Thorotrast* Departments of Radiology and Pathology C. R. Orr, M.D., G. D. Popoff, M.D., R. S. Rosedale, M.D., and B. R. Stephenson, Ph.D.

25 *Practical Points in the Application of Diathermy Massage, and Exercise* Department of Physiotherapy G. G. Martin, M.D.

26 *Osteogram of Entire Skeleton—Normal Size and Relations* Department of Radiology C. R. Orr, M.D. with the cooperation of the Eastman Kodak Company

27 *X-rays Demonstrating the Principles of Collapse Therapy in Pulmonary Tuberculosis* Department of Tuberculosis D. R. McKay, M.D., and Helen Walker, M.D.

28 *Radiographic Demonstration of Malignant Lesions* Cancer Clinic. Karl F. Eschelman, M.D.

29 *Cholecystograms in Chronic Gall Bladder Disease* Department of Gastroenterology S. A. Graczyk, M.D.

30 *Pathology of Tumors of the Alimentary Tract* Department of Gastroenterology S. A. Graczyk, M.D.

31 *Demonstration of Bone Pathology* Department of Orthopedic Surgery Pio Blanco, M.D.

32 *Clinical and Postmortem Cases of Amebiasis Found in Buffalo and Its Rural Environs* From

the Department of Pathology, Buffalo City Hospital, and Department of Hygiene and Public Health, Medical School, University of Buffalo W. F. Jacobs, M.D.

33 *Clinico Pathological Demonstration of Non-Surgical Renal Diseases* Department of Medicine. A. Levitt, M.D., and J. F. Panton, M.D.

34 *Fundamentals of Plastic Surgery in the Treatment of the Fractured Nose* Department of Plastic Surgery D. Arce McGregor, M.D.

35 *Clinical and Pathological Features of Gall Bladder Disease* Department of Surgery J. Burke, M.D., and S. Ryerson, M.D.

36 *Demonstration of Morbid Anatomy of the Larynx* Department of Otolaryngology M. L. Gerstner, M.D.

37 *Surgical Pathology of the Kidney* Department of Urology E. L. Brodie, M.D.

38 *Pathology of the Female Genital Tract* Department of Gynecology E. G. Winkler, M.D., A. J. Kelley, M.D. and H. A. LaForge, M.D.

39 *Anatomical Demonstrations* Department of Anatomy, Buffalo City Hospital H. F. Wherley, M.D.

40 *Preservation of Hearing* Department of Otolaryngology M. L. Gerstner, M.D., in cooperation with the American Society for the Hard of Hearing

41 *Hearing Tests Under Normal and Pathological Conditions* Department of Otolaryngology M. L. Gerstner, M.D., F. Jordan, M.D., and J. Glosser, M.D.

42 *Appearances of the Fundus Oculi in Diseases Encountered in General Practice* Department of Ophthalmology W. F. King, M.D., and C. J. Streicher, M.D.

43 *Conservation of Sight* Department of Ophthalmology W. F. King, M.D., and C. J. Streicher, M.D., in conjunction with the Buffalo Sight Conservation Society, Inc.

WANTED DATA ON HEREDITY

The Bureau of Human Heredity, 115, Gower Street, London, W.C.1, England, is gathering material dealing with human Genetics. The Bureau is directed by a Council representing medical and scientific bodies in Great Britain. It is affiliated to the International Human Heredity Committee, which ensures co-operation in all areas where research is proceeding.

The Council would be grateful to receive all available material from Institutions and individuals, furnishing well-authenticated data on the transmission of human traits whatever these may be. Pedigrees are particularly desired, twin studies and statistical researches are also relevant. As research workers and others who send in material may in some cases wish to retain the sole right of publication (or copyright) those

who so desire are asked to accompany their material with a statement to that effect.

Material should be given with all available details in regard to source, diagnostic symptoms and the name and address of the person or persons who vouch for accuracy. All such details will be regarded as strictly confidential. Reprints of published work would be most acceptable. Further, many authors when publishing material may also have collected a number of pedigrees which they have been unable to reproduce in detail. It is the object of the Council that such records, by being included in the Clearing House, should not be lost. Those wishing for a copy of the Standard International Pedigree Symbols may obtain one from the office. Announcements in regard to the services undertaken by the Bureau will be published from time to time.

DEATHS FROM ACUTE ACCIDENTAL POISONINGS

In the American home today are found many poison-containing compounds used as drugs, medicines, liniments, disinfectants, insecticides, cleaning fluids, and fuels. Many of these are labeled "poison", many apparently are not known to a large number of people to be capable of killing when ingested. Ignorance of their contents or sheer carelessness in not storing them safely

are responsible for the majority of the 1,400 deaths from poisons in the United States annually. About one-third of these deaths from acute accidental poisonings occur among children under five years of age, and of these, nearly one-half occur in the second year of life.—*Statistical Bulletin* of the Metropolitan Life Insurance Company.

We have been unable to confirm the report that the medical profession is trying to

interest Wallace in an apple-control bill—*Philadelphia Inquirer*

Part I. Outline of history of medicine in the State of New York

Chapter I

Early Practitioners and Development of Medical Schools

Early physicians, British Army physicians, European medical education Meager training of practitioners, First medical schools, Philadelphia College, 1763, Kings College and Doctors' Row, 1767 College of Physicians and Surgeons 1807, Union with Kings, 1814 Union with Columbia, 1860, Fairfield College 1812, Geneva College, 1834 Albany Medical School, 1839 University of City of New York 1837 and union with Bellevue 1898, University of Buffalo, 1846, Niagara University, 1893, Union with Buffalo 1898 Long Island Medical College, 1866, N. Y. Homeopathic Medical School 1860 Syracuse taking over Geneva College 1872, Post Graduate Medical School 1882 Limitations of early schools, poor equipment, dissection difficult

The drama of medicine resembles the lives of some of our great men, beginning in want, struggling for development of goodness and greatness in itself, giving unselfish service, and going unappreciated and lightly rewarded for its great work. We fail to appreciate that which we accept too easily, which is freely given and that which we do not understand. Our sanitary laws, our great medical institutions, and our skilled physicians have come to us through long years of struggle, not upon the part of the layman but through the efforts of the medical men themselves.

The greatest fear of our forefathers was not of want, for the man who tilled the soil, ate. Their dread was of disease, an ever-threatening presence. Today man fears hunger, his dependency upon his fellowman being so great, but he no longer fears disease. He rests in confidence knowing there are skilled men "on call" to care for him and battle for his preservation. He knows that public health laws protect him on every side. But he accepts this skilled attention and the protective laws much as he accepts all laws and justice without questioning whence they came or through whose efforts they were brought about. It is therefore fitting that we should pause in our rush of living to learn how living became assured.

Before considering the history of medicine in the County of Monroe, which is our chief concern in this record, it will be necessary to review first the development of medicine in the State of New York, to trace the beginning of legislative regulation of the practice of medicine and surgery and the building of medical schools.

The transactions of the Medical Society of the State of New York are a source of much information regarding the history of medicine in the state. The by-laws of the Society required its presidents to give an address at the annual meeting or forfeit the sum of twenty-five dollars and these

annual addresses were evidently prepared with great care, some pertained to diseases prevalent at the time but many were written regarding the development of medical practice and education in the state. There are much valuable data in these addresses and in the reports of Committees, regarding various colleges, medical and literary, as they were termed and considerable of this information may well be included in this review.

Dr McNaughton,¹ president of the Society in 1837, tells us that medical science was at low ebb in Europe when New York State was first settled. It had not emerged from the superstition and empiricism of the Middle Ages. The clergy acted as physicians, the barbers as surgeons, and ignorant females performed as midwives. Walsh, in his history of medicine in New York State, resents this statement which has been made so frequently. He names many famous physicians and surgeons living in Europe during that time. However, none of them came to early New York. The first clergymen arriving did endeavor to help the sick and with some success, many came prepared to practice some medicine in the new settlements. We read, for example, that the first medical society formed in this country was in East Jersey in 1766 and that its first president was Rev. Dr. Robert McKean.² The first regular physician to settle in New Amsterdam, Walsh says, was a Huguenot named Johannes LaMontague, who arrived in 1637. He was skilled in his profession and was honored with public offices, one of them being Vice-Director at Fort Orange, which later became Albany. "Zieckentroosters" or comforters of the sick, went from home to home like the visiting nurses of today and were well-regarded and recompensed. Dr. Abraham Staats, one of the pioneer physicians from Holland, settled in Albany and ministered to the sick of the surrounding country.

A civilized world with increasing luxuries and desires has brought in addition to old diseases of the body, new ailments of mind and body. The physician is a healer to whom we turn in our troubles.

Often we wonder why the medical man is of so fine a type. The explanation is sometimes given that medical schools are discriminating and select a high type of manhood. Again, that the long hard grind of acquiring a medical education gradually eliminates the unfit. Others claim that attendance upon the sick and the necessity of patiently caring for them inbreeds a finer feeling and requires a greater courtesy which colors the life of the physician. Certainly all of these have their influence. Nevertheless, it is not these factors alone which have produced the fineness of character which is exhibited today by the medical profession.

The profession calls the finest type of manhood to service. Those who enter the service for material gain or for social advantages are few. It is the desire to alleviate suffering manhood, the highest kind of philanthropy, that calls the medical student. The missionary going to foreign fields is upheld by his feeling of divine approval and ultimate reward. The physician's joy is in service. In reading old medical annals, we are impressed with the high ethical character of medical men and the ethical conduct which they demand of their coworkers. *Materia medica* has changed, surgical practice has made great strides, scientific discoveries have changed the habits of the world, even religion, Protestant, Jewish, and Catholic, has relaxed in the severity of its laws, yet the ethical code of the medical profession has endured. The doctor sits in patient silence amidst his slanderers, trusting that understanding and appreciation will follow later. He neither advertises his skill nor exploits his art, nor allows his coworker, if one should be so minded, to do so. Anyone daring to step from this high ethical plane, is thrust from the fold, a punishment so great in its results, that few dare risk incurring it.

The doctor has not been a business man in the past, he is not one today. Those who have become wealthy have done so usually through wise investments of small capital under the guidance of more materially minded persons. It is years before the

young practitioner can pay off the cost of his medical training and his office equipment. His fees are not consistent with the cost of his education. The public does not understand this and the medical man does not explain.

The physician is beloved by his patients, his kindly countenance is watched for, and his stay at the bedside is much too short to the mind of the suffering one. He is the greatest friend of the ill but forgotten when health returns. The installment on the radio or on the car, the interest on the mortgage, the needs of the day and some social requirements, all are paid for before the doctor is remembered. The arrival of his bill brings annoyance, pressure for payment not to be borne, he has to wait. Perhaps he is never paid. Nevertheless, he is expected to fly to the bedside immediately upon call whether in the day or at night. And he answers the call, as cheerfully and efficiently as he answered the earlier calls which brought no remuneration.

The poor we always have with us and all professions must contribute toward their care, but it is the medical profession that bears the heaviest burden. He gives his services not only to the individual but also proposes the establishment of hospitals, clinics, and asylums. Throughout their lives, medical men give abundantly of their medical skill without expectation of reward or even gratitude. Some of their greatest operations are performed upon the poor. There was a time when many of those unable to afford medical care, did without it rather than be "paupers" receiving free help. Today it is considered clever by many well able to pay, to get into a clinic and receive complete examinations, expensive treatments and drugs at cost. The physician recognizes this. He objects but not loudly. He is indignant yet continues to give his services, performing to the utmost of his skill, curing diseases, and comforting the distressed. He knows he is being put upon and that he is smiled at for being so gullible. Splendid in his foolishness, upon his high ethical plane he is a pattern for great living. We recognize it and we honor him always. He brings us into the world, he eases our going out and all the years between, he is our helper in time of need, our trusted and unfailing friend.

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Dr Romaine, the first president of the New York County Medical Society and a fellow of the Royal College of Edinburgh, in his presidential address in 1811 before the State Society, stated that the English Army sent to this continent for the conquest of Canada, materially improved the condition of medicine in this state.

The English Army employed for that purpose left Europe accompanied by a highly respectable medical staff, most of whom landed in the city of New York and continued some years in the neighboring territories, affording opportunities to many young Americans of attending the military hospitals and receiving professional instruction as gave them afterwards consideration with the public. The physicians and surgeons of the Anglo-American Army gained the confidence of the public by their superior deportment and professional information. The military establishments in this state after the Canadian war required medical and surgical attendants, so that the people had the benefit of their professional advice. In this manner a new order of medical man was introduced into this community.

The military hospitals being mostly in this state, brought a diffusion of medical information through the state. Dr John Jones, Professor of surgery in the first medical school in New York and writer of the first medical textbook published in this country, was an American surgeon who served in the Revolutionary War and the French-Indian War.

Ship surgeons, many with very little training, landed in New York and remained as surgeons. The first surgeon in the New York Colony, Walsh states, was Herman Meynderts Van den Boogaerdt from Amsterdam in 1631, a ship surgeon who later became surgeon at Fort Orange and rendered valuable service until killed through treachery of the Indians. Because the ship surgeons were often unskilled but practicing in the colony, the Council of New Amsterdam gave to Dr LaMontague the right to issue permits to practice in the colony. In 1643, another skilled army surgeon, Paulus Van der Beeck settled in Brooklyn.⁸ Samuel Magapolensis, M.D., of Leyden is the first known university graduate to have come to New York, arriving in 1662 and was not only a physician but also collegiate pastor of the Dutch church in New Amsterdam. He was followed ten years later by Johannes Kerfbyle of the same place, then

Johnson, Brett, Lockhart, Van Buren, and Nicholl before 1800.⁶

After New York State came into British hands, the early educated physicians of the state came from the University of Edinburgh or from private schools in England. Only a few students from this country could afford to go abroad to study medicine. A number of graduates of Harvard and other colleges did study abroad and obtained doctorates in medicine. The general custom in this country was to study in the office of some practitioner until the instructor or the student himself, felt that he was ready to practice. Few were able to attend medical lectures even after some medical schools were available.

The preliminary attendance for the degree of doctor of medicine was expensive, the time to be consumed in its attainment was deemed too valuable, and it was not sought for, except among the residents of our larger and more populous cities, so its absence was not considered as a mark of want of medical knowledge. The number of gentlemen who held the degree of medicine in this State, thirty years ago (1796) did not exceed twenty.⁷

Indeed, there were in all the colonies together, 3500 practitioners, only 400 of whom were graduates.⁸ We may wonder at this small number of medical men in our own state, the state which now occupies a leading position in the country but we must remember that this was not true of the state at the time of the Revolutionary War. Walsh states that New York State was then only fifth in population, that Virginia had double its number of people, Pennsylvania twenty-five per cent more, North Carolina exceeded it, Massachusetts was far ahead, Maryland equal, and Connecticut almost equal to New York State. New York City was smaller than either Boston or Philadelphia.

Dr McNaughton⁹ deplored the lack of preliminary education before entering upon the study of medicine. He said many medical students were destitute of classical attainments and even their English education was imperfect. Some could not translate their diplomas. He felt that without a knowledge of Latin, it was too difficult to memorize anatomical, botanical, and chemical names.

The candidates for the medical degree are only required to be able to write an English dissertation on some medical subject with grammatical accuracy and freedom from gross

violations of orthography in addition to requisite knowledge of the several branches of medicine.

This, in marked contrast to the requirements for other professions, the clergy required four years preliminary study before becoming a theological student, and before studying law, one was required to have studied seven years in the office of a practicing attorney or to have had four years of classical study

Until 1776 only fifty-one degrees in medicine had been issued by American colleges, by 1780 about 250 had received degrees, and but five times that number had attended one course of lectures in some college. An applicant for a license to practice medicine had only to study in a private office for four years, after which he received from the Board of Censors of the County or State Society "a license for medicine, surgery or midwifery without having heard a lecture on anatomy, witnessed a human dissection, seen an important surgical operation or attended a woman in childbirth"¹⁰ The medical schools then existing had no hospitals nearby, except in New York City, so that it was impossible for many receiving a degree in medicine to witness a dissection. The laws of New York forbade dissection of any corpse except that of a convict. These convicts came from the prison at Auburn and only those dying in winter could be used, not more than two or three a season. That the sale of bodies occurred even in those days is shown by an article in the *Rochester Gazette* of 1821, copied from a Montreal paper reporting that "an evidence of hard times is that the bodies of two deceased children had been sold by their mother for anatomical purposes at the price of four dollars each"

Studying medicine only with a practitioner, without a course in a medical school made it easy for impostors to come into the state and open offices for practice. Quackery abounded everywhere and many assumed the title of doctor who "never had read a volume of medicine."¹⁰ Some boasted of intuitive knowledge or practiced what they termed Indian medicine, pretending a knowledge of the medicinal qualities of native herbs. President Wychoff in the transactions of 1876, stated that many root and herb doctors flourished less than a century before, especially in outlying districts where there was a scarcity of practitioners,

imitating Indian Medicine-men by using herbs, fasting, and sweating. Later these herb doctors formed a Thompsonian Society and created so great a controversy in the State that they caused a repeal of the laws regulating the practice of medicine. Wychoff adds that the chief legacy of the aborigines to medicine was the disclosure to the white man of the High Rock Spring at Saratoga. It is said that the Indians carried their adopted brother, Sir William Johnson in August 1767, to the medical fountain where he was cured of a stubborn dysentery and an unhealed wound received in a battle. Thus the spring became famous.

Colleges for instruction in theology, literature, and the arts were founded in Virginia and in New England almost as soon as the country was settled, Harvard in 1638, William and Mary in 1691, Yale in 1700, and Princeton in 1746, yet it was more than one hundred thirty years after Harvard was opened, before any medical schools were established.

Dr John Bard and Dr Peter Middleton of New York in 1750 gave private lectures in human anatomy but it was in Philadelphia that the first attempt was made to establish a medical school. Dr William Shippen⁹ in 1763 gave a course in anatomy to ten pupils and was joined by Dr Morgan. The trustees of the Philadelphia College were petitioned to establish a medical faculty under its auspices and consented. The first medical degrees were conferred there in 1769. In 1767 in New York City a medical faculty was organized under the charter of Kings College and opened in 1768 with six professors, Dr Peter Middleton of theory of physic, Dr James Smith of chemistry and materia medica, Dr Samuel Clossey of anatomy, Dr John Jones of surgery, Dr John V B Tennent of midwifery, and Dr Samuel Bard, professor of the practice of physic. Four of these professors, Wychoff says, were Americans who had graduated in medicine abroad, two at Leyden, one at Rheims, and one at Edinburgh. The Degree of Bachelor of Medicine was conferred in 1769 by that faculty upon Samuel Kissam and Robert Tucker and in the following year, 1770, the degree of Doctor of Medicine was conferred upon Robert Tucker. In 1771 the Philadelphia College conferred its first medical degrees upon four students. Although these degrees were obtained in the short period of

two to three years, we are assured that the standards for entrance were high, the applicant being required to have a proficiency in Latin and the natural sciences and to have served a three year apprenticeship with a physician. During the time of apprenticeship, the student read medical books, assisted the physician in his work, and prepared drugs. Indeed, the early medical students seemed to have much better preparation than those that came later.

A hospital connected with Kings College, later known as Columbia College, was built in 1769 but almost entirely destroyed by fire before quite finished, and was rebuilt in 1771. During the Revolutionary War the lectures ceased but the medical faculty was reorganized in 1792 and the school reopened. An interesting event occurred in connection with this hospital in 1788, called the Doctors' Mob or Doctors' Riot, which had significant importance at the time. We have spoken earlier of the difficulty of obtaining cadavers for dissection by students. Robbing of graves of their contents was not infrequent and the public was properly incensed. On April 15, 1788, a human arm was displayed from a rear window of the hospital and, some reports say, was playfully wagged at passersby. Word was quickly passed among the citizens, a multitude of whom stormed into the hospital and destroyed all the anatomical specimens and the medical students escaped from their hands, only through the intercession of the mayor who sent them to goal. The next day the mob searched the homes of the suspected doctors, then stormed the jail in repeated attempts to get the imprisoned students, and were finally forced to give up after being fired upon by the guards and several of the mob killed. A similar riot took place at the University of Maryland the following year.

The prosperity of Kings College waned when a rival medical school, the College of Physicians and Surgeons, opened in New York City in 1807, with an endowment of twenty thousand dollars from the legislature. The members of the faculty and Board of Trustees were the members, 139 in number, of the Medical Society of New York. The school opened with fifty-three students in 1807 and with seventy-six in 1808. In 1811, "eight doctorates were conferred, the largest number ever graduated in New York up to that time."¹¹ Rivalry

was keen between the two schools but they were united in 1814 and the faculty of the first was abolished, a number of its professors being included in the new union. The school now gained much fame but discord arose between the Faculty and the Board of Trustees, the Board consisting of physicians and laymen. One charge was that tuition fees exceeded the authorized amount by sixty per cent, another was that an inordinate percentage of the students was given the medical degree at one time, almost fifty per cent of them. It is easy to understand how such a condition could arise. The faculty received no compensation except student fees and it was easy to make fees exorbitant and to graduate students rapidly, for a short term attracted many students. A committee of investigation was appointed in 1825. It was found that the college had received from the State the amount of \$66,457.27 in endowment and \$75,000 for a botanical garden. The trustees asked that the professors be paid a salary and the tuition be used for the development of the school. The professors refused the conditions and resigned. The college was declared insolvent. The endowment had been spent and also, the anatomical museum that had cost the State \$7,000 purchased from a late professor of anatomy, had been sold by his heirs as private property. The botanical garden which had cost the State so much had proved too great a burden to maintain and had been bestowed upon Columbia College. A new faculty was appointed with Dr. John Watts, president. After a long struggle, the debts were finally paid in 1830 and the school gradually gained in popularity until in 1834, it was found necessary to erect new buildings. The college continued to flourish and in 1860 it was joined with Columbia College, "the trustees of Columbia College formally adopting the College of Physicians and Surgeons as the Medical Department of Columbia College" but it was not until 1891 that the union became complete and the College of Physicians and Surgeons conveyed all its property to Columbia College for the purpose of medical education.

In this short resume of the history of medicine in the State of New York, it will be impossible to give more than brief mention of the various medical schools of the state. Their full history is given elsewhere. We are interested only in giving a general picture of the development of medical

education and practice, so that we may better understand the progress of the practice of medicine in our own county [Monroe.]

The Regents of the University in 1812 organized another medical, this time at Fairfield in Herkimer County. It grew out of a medical school which had been established there by the trustees in 1809. The Legislature voted an endowment of fifteen thousand dollars which was to be raised by lottery. The school struggled along for six years, after which time the State granted an additional endowment of one thousand dollars for five years. The term of instruction was shortened one year and the school began to flourish. In 1834, there were 217 students, fifty-five of whom received the degree of Doctor of Medicine that year. Then there came a report of the need of a medical school in the western part of the state, where it was said one million people dwelt without a medical school. So it was in 1834 that Geneva College was allowed to form a medical faculty with the power to grant degrees in medicine. Dr McNaughton, writing in the transactions of 1840, says

There is not support for two respectable schools in the country and it is more than probable that at no distant period, one or both of the existing ones will be discontinued.

Neither of them was regarded as prospering at that time. Fairfield gradually lost its pupils while the school at Geneva gained in popularity and the last courses were given in Fairfield during 1839-40, only 105 students attending and twenty-six graduating with degrees of doctor of medicine. The medical school ceased to exist and the building became the property of the Fairfield Academy.

From 1835-37, Geneva graduated eight medical students annually, increasing to forty graduates during 1841-51. Geneva became well-known because it was there that the first woman student, Miss Blackwell, was admitted to study medicine, graduating in 1849. Although her presence in the school was admitted to be beneficial and she was highly regarded by the student body, it is interesting to read that her sister was refused admittance only a few years later.

The Transactions of 1858 gives the following table showing the attendance at these three colleges

	Physicians and Surgeons	Fairfield	Geneva	All Medical Colleges of the U S
1824-25	196	120		1970
1829-30	113	160		1716
1830-31	167	182		1898
1831-32	186	205		1759
1832-33	189	190		1729
1833-34	159	217		2236
1834-35	132	197	42	2299
1835-36	124	163	68	2652
1836-37	106	164	60	2393
1837-38	115	142	67	2309
1838-39	96	114	76	2387

Other medical schools established later in New York State we will mention but briefly. Albany Medical College opened in 1839, succeeding Dr Alden March's Practical School of Anatomy and Surgery, and not until 1881 was the Albany College of Pharmacy formed as a part of it. The Medical Department of the New York State Library, so much used by the physicians of all New York State, was begun when Albany Medical College gave its medical library to the state.

Two years earlier, on February 11, 1837, the University of the City of New York was authorized to establish a medical school and to give degrees in medicine which degrees, in themselves, gave a license to practice. In 1898 this school was united with the Bellevue Hospital Medical College. Bellevue Hospital was built in 1858 as the Almshouse Hospital of New Amsterdam, the Almshouse having been erected in 1734 after the third smallpox epidemic. Soon afterward the College of Physicians and Surgeons was opened, the hospital was used for clinical work by the students and it became a center of clinical teaching in New York, courses of lectures being given regularly by its staff. In 1861 a medical faculty was selected and the college opened and prospered up until 1898 when part of the buildings were destroyed by fire so that the classes were compelled to use the New York University for their sessions. This helped to consummate the proposed union of the two colleges.

The department of Medicine of the University of Buffalo was established in 1846. In 1893 the Niagara University Medical School was opened at Suspension Bridge, open to both men and women students. Niagara claims the honor of being the first to "suggest the need of four years of graded medical training and of definite preliminary education." In 1898 the college merged with the University of Buffalo, which had been prospering through the years.

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it is only in the past fifty years or even less, that medical schools have attained to a high standard in this State and Country

The individual practitioner, his medical preparation, and his general background having been discussed at length, we turn to a consideration of physicians collectively, their associations, and the enactment of medical legislation. Preventive medicine has become a large part of the practice of medicine, and the present healthful conditions in the communities of New York State are due to these medical organizations and the laws they have promulgated to safeguard the health of the people under their care.

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Chapter II

Rise of Medical Societies and the Code

Medical legislation first in New York City in 1760 in New York State in 1797 Incorporation of Medical Societies 1806 Medical journals of the time Examination of candidates, Medical ethics early system, 1822 High idealism Honorary degrees in medicine American Pharmacopeia, New era in medicine in State

Legislation to regulate the practice of medicine developed as pseudo-medical practitioners multiplied, and Chief Justice William Smith is quoted as saying

Few physicians among us are eminent for their skill. Quacks abound like locusts in Egypt and too many have recommended themselves to a full and profitable practice and subsistence. This is the less to be wondered at as the profession is under no kind of regulation. Loud as the call is, to our shame be it remembered, we have no law to protect the lives of the King's subjects from the malpractice of pretenders. Any man at his pleasure sets up for physician, apothecary and churgeon. No candidates are either examined or licensed or even sworn to fair practice.

Although the Province of New York held an annual assembly since 1663, it was not until 1760 that an act was passed to "regulate the practice of physic and surgery in the City of New York" The preamble stated, "Whereas, many ignorant and unskilled persons in Physic and Surgery in order to gain subsistence, do take upon themselves to administer physic and practice surgery in the City of New York, to the endangering of the lives and limbs of their patients, and many poor and ignorant persons who have been persuaded to become their patients, have been great sufferers thereby, therefore " The law required a certificate to practice, after the practitioner was examined by one of His Majesty's Council, the Judge of the Supreme

Court, the Attorney General, and the Mayor or any three of them, assisted by others selected by them Practicing without such certificate carried a penalty of five pounds Thus, the examiners of those wishing to practice medicine did not belong to the profession In 1792 the act was revised and applied to New York City and the County of New York It required that the examiners call to their assistance any three respectable practitioners with whom the student had not studied. This act did not affect those already in practice and for that reason New York City continued to have a great number of irregular practitioners

The first State legislative act to regulate the practice of medicine in the whole state was passed in 1797 All practitioners had to show evidence that they had practiced for two years just preceding or had studied for those two years The penalty for practicing without a license was twenty-five dollars A student must furnish a certificate from a respectable physician or surgeon that he has studied for four years and was well-qualified, if he had graduated from a literary college, three years were sufficient Those having a bachelor in medicine or a doctorate in medicine from one of the medical schools then existing, Philadelphia, Columbia or Harvard, had only to file their diplomas

After the establishment of State and County Medical Societies, there were three bodies with the power to license, (1) the

A charitable dispensary was erected in Brooklyn in 1856 and in the following year became St. John's Hospital. From this grew the Long Island Medical School, opening in 1860. In 1863 the first medical school for women, the New York Medical College for Women, opened with eighteen students. It was the first college of its kind in the world.

Homeopathic medical students had to obtain their medical instruction in other states until 1860 when the New York Homeopathic Hospital was opened. In 1887, the Flower Hospital was added to its buildings and to its name, the first medical school in New York to have its own hospital.

Geneva College in 1872 became the Medical Department of Syracuse and the library and museum were moved to Syracuse. Cornell University established its medical department in 1898 in New York City in order that it might be nearer the larger hospitals, though it was possible for students to take the first two years of medical instruction in Ithaca. Fordham University School of Medicine was opened at St. John's College, Fordham, N. Y., in 1905 in connection with the newly erected Fordham Hospital and in 1912 a College of Pharmacy was added.

The first postgraduate school of medicine was started in 1875 by the New York University Medical College, lasting seven years. In 1882, two postgraduate medical schools were opened in New York City, the New York Polyclinic and the New York Post-Graduate School.

We have digressed a long way from the early schools which we were discussing. Having hurriedly followed the establishing of many medical schools in this state, let us return to a consideration of the limitations of the very early schools.

The extent of the equipment of these early medical colleges is described by Dr. Alden in his presidential address in 1857.¹²

Our medical colleges or schools were limited to five and the hospitals in this country but a little more numerous, the whole apparatus, chemicals and chemical tests of the chemists' laboratory could almost be packed in a bushel, the anatomical museum of a college consisted of two or three smoky skeletons, a handful of disjointed bones and a few sparsely injected preparations and a pathological cabinet was not known in our country.

The need of further study in the field of anatomy and pathology was keenly felt by the practitioners. In 1854, Dr. Sprague,

president of the State Society spoke of this great need and said that an attempt to operate for the many diseases to which the human body is liable, without acquaintance with the minute anatomy of the body cannot except by rare accident result in anything but death to the patient. Yet, because of the law which forbade dissection of any but felons, the medical student and practitioner lacked this competent knowledge. He said that the four colleges then existing, the two in New York City and those in Geneva and Buffalo, received from Auburn and Sing Sing prisons an average of less than five bodies a year for the past ten years. It had been said in arguing against dissection of the bodies of paupers that the medical men desired to use the bodies of the poor for the benefit of the rich. He asked which was more humane and benevolent, to allow the medical student to cut up the living bodies of the poor in the public hospitals or to examine their bodies after the vital spark had fled. "Tell me then, who can," he said, "who is the true and tried and faithful friend of the humble poor? He who says to them, 'be ye warmed and fed,' but lifts not a hand to do it or he who diligently seeks opportunity to minister to their necessities?" He asked then that a law be enacted that the bodies of the poor who had died of their own vices, unwept by any, a disgrace to all, be given for dissection. No sorrowing relatives or friends could then be hurt and good could be brought out of evil.

In 1836 Dr. John H. Steel, President of the State Society said that the medical schools were in a flourishing condition and "it is now indeed, a rare occurrence for a candidate to present himself for the honors of the faculty, without being well instructed in not only the popular and leading opinions of the best medical authors of the day but in all the collateral branches of knowledge which constitute a profound and refined education."

In our reading of old books and papers, we note again and again that the criticism of the practitioner of those days is of those who obtained their training outside of medical schools. We are told that the medical schools of the early days had high requirements for entrance. A good medical course and examination were necessary before diplomas were granted and that later laxity crept into the schools both in requirements for admission and for graduation, and that

nal of Medicine and Collateral Sciences, a monthly journal of one hundred fifty pages, the *American Medical Gazette and Journal of Health*, a monthly of fifty pages, the *American Medical Monthly* of seventy-five pages, the *New York Medical Times*, a monthly of thirty-five pages, *Nelson's American Lancet and Weekly Journal of Medicine*, the *Buffalo Medical Journal and Monthly Review of Medical and Surgical Science*, of sixty pages and finally, the *American Journal of Insanity*, edited at the State "Lunatic" Asylum at Utica, a monthly of one hundred pages

But to return to the discussion of medical societies. The censors of the County and State Societies were busy examining candidates to practice medicine. A license from the State Society cost ten dollars and from a County Society, five dollars. These fees were added to the respective treasuries. The newly licensed practitioners were required to take the following oath

I, _____ do solemnly declare that I will honestly, virtuously and chastely conduct myself in the practice of physic and surgery, with the privilege of exercising which profession I am now to be invested, and that I will with fidelity and honor, do everything in my power for the benefit of the sick committed to my care.

This oath required in New York State at this time we have been studying, makes us think of the ethical code that prevails to this day among the medical profession and perhaps will continue forever. Let us digress again, to consider it for a short time.

A system of medical ethics was formed by the State Society in 1822, which concerned first, the personal character of the physician

A physician cannot successfully pass through his career without the aid of much fortitude of mind and a religious sense of all his obligation of conscience, honor and humanity. His personal character should therefore be that of a perfect gentleman and above all, be exempt from vulgarity of manners, habitual swearing, drunkenness, gambling or any species of debauchery and contempt for religious practice and feelings.

A further requirement was that he commit no crime, he should not degrade the character of the profession by "keeping a tavern, lottery office, gambling, victualling or playhouse. Any low trade or servile mercenary occupation is incompatible with

the dignity and independence of medical avocations." The penalty inflicted for violation of the code was forfeiture of the privileges of the profession.

The second division of the code concerned quackery. A physician should not associate with quacks professionally, he should not use patent medicines, he should not advertise his profession in any way.

The third was regarding consultations and said, first, that the distinction between surgeon and physician had no foundation in propriety, that the attending physician in calling another in consultation, remains in charge and the consultant is required to retire silently in case of disagreement, to keep the deliberations secret, to make as few visits as possible. Moreover, the attending physician is not to neglect to call a consulting physician when life or limb of patient is in jeopardy.

The fourth division of the code condemns violation of the confidence of families, the "prescribing of remedies if remedial means interfere with matrimonial rights," the infringement upon the rights of another practitioner or making improper charges against him, the visiting of patients without permission from the attending physician and there should be absolute secrecy regarding a physician's practice, even though his services were given to the poor without a fee.

Further, the code demands, a call for medical help shall be answered at once unless another patient is being attended and if two or more physicians arrive upon the scene, the first to arrive only shall stay, except when one of them shall be the family physician, then he shall be the one to remain. A physician shall not undercharge for his services in order to draw patronage, such conduct being undignified, nor shall he over-charge, so that the middle class will hesitate to seek medical aid. Physicians are admonished to belong to medical associations, that they may exchange information regarding their profession with others.

The last division of the code is in regard to forensic medicine. A physician should always aid in judicial investigations as far as he is able that justice may be done and they shall confer with each other on a case and not disagree if possible, if the physician has been related to the case, he must keep secret the facts known to him. The physician is to leave to the clergy the

Board of Censors of the County Societies, (2) the State Society, and (3) the Regents of the University of New York, the last of which gave the right to some of the medical faculties. From 1806 to 1907, this led to great diversity in requirements for a license and "in the contention of these, the legal regulation of the practice of medicine suffered untold harm"¹

Incorporation of medical societies "for the purpose of regulating the practice of physic and surgery" was ordered by a law passed in New York State Legislature in 1806. This law directed that the physicians and surgeons in each of the counties of the state, who were licensed to practice, meet in July of that year and, if five or more in number, form a medical society. Representatives of these County Societies were to constitute a State Society which should meet in Albany annually. Censors were to be appointed by each County Society for the purpose of examining medical students desiring to practice, licenses should be obtainable in no other way. Anyone practicing without a license could not collect for services. Students should present testimonials showing three years of study "but always preceding on the principle of improving the profession in future and not pressing too hard on the peculiar situation of those now in practice"

Within three months of the inacting of this state law, twenty County Societies had been formed. For the first time, the law now required that medical students should be examined by practitioners. A revision in 1809 allowed those with the degree of doctor of medicine to practice without examination. A further revision in 1813 added "that nothing in this act contained shall be construed to extend to debar any person from using or applying for the benefit of any sick person any roots, bark or herbs, the growth and produce of the United States". Thus, anyone might practice medicine if he used herbs indigent to this country. Dr Alexander Coventry, president of the State Society in 1825, said

While the regular physician is made subject to several years of study, a set of impostors, whose impudence is only equalled by their ignorance, are allowed to rob and murder the good citizens under the pretence of using only herbs and roots, the product of the country, although it is well known that they deal in the most powerful drugs in the shops, however ignorant, as they must be, of their composition and qualities

These were the persons who were known as botanical or botanik doctors

Anyone practicing without a license was not penalized if he received no fee or reward. "It makes the penalty attach, not to the practice of physic without the evidence of proper qualification but to the receipt of a fee therefor, it makes no account of the disastrous consequences of unlicensed ignorance but seriously attacks the petty emoluments of its craft, it, in effect, punishes the larceny while it acquits the homicide"²

By the law of 1818, the years of study were increased to four except that one year was deducted if the candidate had attended "classical lectures" for that period, after the age of sixteen or had attended a course of lectures in a medical school. He must be twenty-one years old to obtain a license to practice.

The first meeting of the State Society was held on February 3, 1807, in Albany, the year after the enactment of the law requiring the formation of County Societies. At this meeting, which was attended by seventeen delegates representing ten counties, the members were directed to furnish geographical and topographical surveys of their respective counties, together with a description of diseases prevalent there. A number of counties did furnish surveys and it is to be regretted that all did not do so, for we are thus deprived of much information that would probably be of value in this historical study.

Dr Rodgers, state president in 1813, reported in his address, that inflammatory diseases were prevalent in the state, due to rapid change in heat and cold that year and to the change in moisture and dryness of the atmosphere. The summer of 1811 with "severe hot portions" was followed by a mild winter except that January was intensely cold. He said that phthisis pulmonalis was more frequent than formerly and he puts part of the blame on the modern dress of young females. Dr Rodgers stated also, that he was unable to report any improvements in medicine that year as the war with England had prevented the reception of recent medical publications. The only medical journals published in New York State at that time were the *Medical Repository*, first printed in 1797 and the *Medical and Philosophical Register*. Sixty years later, we find seven medical journals published in the State the *New York Jour-*

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task of announcing approaching death to the patient nor shall he advise in the settlement of worldly affairs

The high ethical calling of the medical man is emphasized repeatedly by the profession itself. Dr Jenks S Sprague in his annual address before the State Society in 1854, said

It becomes our duty to analyze all material things and to separate the hurtful from the harmless, to certify to man what is conducive to health, to happiness and longevity and to admonish him of the danger he incurs by an unrestrained indulgence in his appetites and passions. It is our business to indicate the consequences of a departure from the laws of health, as well as to cure the ills and heal the wounds we can not hinder, to admonish the healthy and to bring back to health and happiness, the diseased, the unfortunate and the erring. Charged with these high trusts, "what manner of man" ought we to be to command the confidence and respect of an intelligent community?

He answers the question by saying that nothing short of a general, a thorough, a liberal education can qualify for an honorable discharge of such duties. He demands sound learning and unswerving integrity as a basis of character in this profession.

Medical men have not only been healers of the sick but admonishers of the healthy, as Dr Sprague says and "it is surely creditable to the philanthropy of a profession which earns its daily bread by curing diseases, that it devotes so largely its time and its best energies to prevent their formation." The annals of the State and County Societies record many instances where the medical profession urged and obtained sanitary regulations, protecting the public (often against public wishes) against epidemics which had been so fatal in earlier years and how they constantly instructed the public in the principles of hygiene.

Again, we read, "As medicine is not a creed, not a dogma, but embraces the whole circle of science in its bearing upon health and life, that a standard unequivocally distinguishing the scientific physician from the dealer in cabalistic preparations be established, be it resolved, etc." and that Society urges further restrictions in the code.* Dr A Clark, President of the State Society in 1853, said

Medicine demands of us that we be men of integrity and honor, men of character, that she may be respected in us, men of charity

that she may be loved, men of learning that she may exercise her rightful authority, men of research and labor that she may claim from each something to be added to the general stock of knowledge.

Dr Coventry in his presidential address in 1855 expressed the same idea when he said

Medicine is no exception to the general rule that the quality of the individual will be in proportion to his natural capacity, his opportunity for improvement, his experience and habits of observation. The mere assumption of a name, as allopath, homeopath, hydropath or crono-thermal can never qualify a man for the responsible duties of the medical profession who is disqualified by nature or who has not qualified himself by study and observation. True medicine knows no such distinctions and the true physician is content with the designation the name imparts, viz a student of nature.

President Alexander Stevens, in his address in 1849, remarks

The vocation of a physician is the spirit of true Christianity in action. It consists not alone in healing the sick, in soothing the afflicted and recalling the wandering intellect but also in cherishing a love of peace and moderation among all men and in promoting moral and intellectual improvement.

Again in 1850, he says

Let it suffice that our profession is concerned for man at his birth and even before his birth, it follows him through his infancy and childhood, through manhood and old age, aiming to protect him from disease, to increase his strength, assuage his pains and diminish his infirmities, and to administer comfort and relief under all exigencies and under all circumstances, till exhausted nature sinks into the grave.

Not to quote Osler when remarking upon the high idealism of the medical profession, would be a grave omission. The "Beloved Physician" said *

We are here not to get all we can out of life for ourselves but to try to make the lives of others happier. The practice of medicine is an art, not a trade, a calling not a business, a calling in which your heart will be exercised equally with your head. Often the best part of your work will have nothing to do with potions and powders, but with the exercise of an influence of the strong upon the weak, of the righteous upon the wicked, of the wise upon the foolish. To you, as the trusted family counsellor, the father will come with his anxieties, the mother with her hidden grief, the daughter with her trials and the son with his follies. Courage and cheerfulness

will not only carry you over the rough places of life but will enable you to bring comfort and help to the weak hearted and will console you in the sad hours when like Uncle Toby, you have to whistle that you may not weep

You enter a noble heritage, made so by no efforts of your own but by the generations of men who have unselfishly sought to do the best they could for suffering mankind. Think not to light a light to shine before men that they may see your good works, contrawise, you belong to the great army of quiet workers, physicians and priests, sisters and nurses, all over the world, the members of which strive not neither do they cry, nor are their voices heard in the streets but to them is given the ministry of consolation in sorrow, need and sickness

When we read of these words directed by this great teacher to the young men of the profession, we can easily understand the admiration of medical men for Osler and appreciate their ethical plane

With these high standards realized, it is easier to understand the progress that medicine has made in our country and state, in the prevention of disease and in the preventive laws which have been enacted through the earnest efforts of the medical men. Also, it is understandable how the tremendous charitable work done in the medical clinics has developed through the great-heartedness of those in the profession, a charity seen nowhere except in medicine. Dr Clark said in 1853 in his address mentioned before

More than 100,000 in New York City annually receive the gratuitous services of the profession, enjoying the benefits of a kindness as sincere and a skill as profound as the wealth of the rich can buy

Dr Stevens stated also in his address of 1849 that one-third of the practice among the physicians in New York City at that time were without remuneration. Hospitals, almshouses, dispensaries, medical and surgical clinics, the eye infirmary, orphan and lying-in asylum, the colored home, and the institutions for the blind are mentioned as being attended by some of the most eminent physicians. He adds

A money making profession! Why, the number of destitute widows and orphans of medical men became so great that a few years since, an association was formed and is now in progress and successful operation, with a fund raised by their own contributions in New York, to secure from destitution after their death, their wives and children. It would have broken our hearts to have encountered them in our daily visits to the almshouses or asylums

He said that the reason so many entered the profession despite the small pecuniary reward, was because the study was delightful and because the practice brought higher rewards, that of the joy in saving and prolonging life

Again we have been discussing the individual, the medical man in his personal, ethical relation to his patient. We will return to a consideration of his relation to his coworkers in the medical society

A privilege of the State Society was to confer honorary degrees of doctor of medicine. Nominations for this honor were made by the County representatives and not more than four, later six, could be elected each year. They must be practitioners above the age of forty-five. It seems that the young graduate of a medical school sometimes scorned the older practitioner because of his lack of formal education and in turn, the experienced physicians regarded lightly the knowledge of the young graduate. The conferring of an honorary degree upon "aged" practitioners was supposed to ameliorate this condition. When finally all practitioners had a degree, this was no longer necessary. As far as the public was concerned, anyone with the title "Dr" except clergymen and professors, were considered physicians and one as good as another. A doctorate in medicine was important to the profession only

The treasuries of the medical societies, like most of their members, were at no times affluent. In 1816 it was reported at the annual meeting of the State Society that it was impossible to ascertain how much should have been in the treasury because of the insolvency of the treasurer at his death, however, almost one hundred dollars were at hand in the charge of the president and secretary. The medical societies of some counties even petitioned the Legislature for an allowance to pay the expenses of delegates in attending the annual meeting, as the County Societies could not afford the cost. This was not granted as far as we know

That an American Pharmacopeia be formed for use in this country was recommended by the State Society in 1818. So many were being used, such as Cove's, Thatcher's, the Edinburgh and London Dispensatories, the Massachusetts Medical Society, the New York Hospital, the London, the Dublin, and the Parisian Pharmacopeias, all varying so greatly, it was felt that there

was a need for a native pharmacopeia. It was claimed that the traveler received a different preparation under the same name in each village and also that the names of medicines were so multifarious that a name common in one town might be unknown in another or might even be applied to a very different medicine. So it was due to this State that such a book was published. A general convention was called in Washington in 1820 to form an American Pharmacopeia and delegates attended from the incorporated medical societies, the incorporated medical schools, the medical schools attached to incorporated colleges in the United States, and free voluntary associations in states having no incorporated medical colleges or schools.

It may be of interest in illustration of the extent of medical knowledge at that time, to quote part of the annual address of Dr. Coventry, president of the State Society in 1825.

In illustration of the treatment I prefer, in cases of strangers from healthy districts, when exposed to endemic fever, I will state a case which occurred in my practice. On the 10th of September, 1815, I was called to visit L. I, a young man of a full habit and robust form, who had never been sick before, he had just returned from the Cayuga marshes, having been a boatman on the Seneca River. His face was

flushed like scarlet, eyes red, terrible headache and full bounding pulse. A vein was opened in the arm and nearly two and one-half pounds of blood flowed before he felt faint. He now took a full dose of calomel and jalap but the heat and reaction reappearing in about one hour, he was placed on a chair before the door and two buckets of water from a spring poured through a sieve on his head, the shock was great, he went to bed with a chill, orders were given to repeat the effusion should the heat return, next morning he was evidently better, had got some sleep but the skin still being hot and the pulse rather strong, twenty ounces more were drawn from the arm and in about an hour after, the cold effusion. Repeated and strict orders were given to repeat it if the skin became hot and dry, his cathartic had operated and he continued to take lessened doses. On the third day he was convalescent and the mercury stopped.

Perhaps this is what is meant by the expression often heard, "heroic treatment." Medical treatment has come a long way since that time.

References

1. Walsh *History of Medicine in New York* Vol. 1, p. 85
2. *Trans. New York State Medical Society*, p. 356 1807-31
3. *Ibid.*, p. 232
4. *Trans. Report from Cayuga County Society*, p. 269 1865
5. Osler *Acquaintances*

A GREAT BRITISH SURGEON

Many things combined to make Lord Moynihan the most successful British surgeon of modern times, says the *London Times* in a notice of his death in Leeds on September 7, at the age of seventy. It adds that with the exception of Lord Lister, he was the only surgeon to be created a peer. Nature had endowed him with a handsome person, good health, facility of speech, a pleasant voice, and a resolute character, together with great tact and a persuasive manner. To these gifts he added originality of ideas, enthusiasm, and an ability to carry through any scheme upon which he had set his heart. Above all, he was the complete surgeon, in teaching, in advising, and in operating. His students loved him, for he mingled his teaching with a kindly humor and light touches, and on more than one occasion he brought dozens of them to London, paying all their expenses.

After beginning his career as a general surgeon, he gradually devoted himself to the surgery of the stomach, the gall-bladder,

and the intestines. When he was a student the abdomen, except in the case of women, was only explored as a last resource, and usually with a fatal result. It has now become a safe operation of daily occurrence. To assist in obtaining this result Moynihan travelled widely, learning from the surgeons of the United States, France, Germany, and Italy. His operative success was great, and throughout his professional life he adopted the Hippocratic maxim that the patient should come first, and that everything should be done to make the ordeal as light as possible before, during, and after an operation. His fame spread steadily from Leeds throughout the North country until it reached London, where in due course he was elected president of the Royal College of Surgeons of England, being the first provincial surgeon to attain that high honor.

Lord Moynihan, who founded the *British Journal of Surgery*, did much to further the cause of scientific research in surgery.

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested.

Broome County

IT IS ESTIMATED that 300 cases of food poisoning occurred in Endicott and Johnson City in Broome County on September 19. All these cases have been attributed to the consumption of cream puffs sold by a single large bakery. Investigation of the outbreak was conducted by the local health authorities in cooperation with representatives of the State Department of Health.

DR. C. H. BERLINGHOF was elected president of the Binghamton Academy of Medicine, at the annual meeting held at the Broome County Tuberculosis hospital Sept 29.

Other officers elected are Vice president, Dr. C. B. Henry, of Binghamton, secretary, Dr. Romeyn T. Allen, of Binghamton, treasurer, Dr. John H. Martin.

The Academy voted unanimously to place its five oldest members, all still practicing, in honorary membership as an award for their lifetime of service and citizenship. They are Drs. F. W. Putman, J. W. Sheffield, L. H. Quackenbush, John H. Martin and C. W. Greene, all of Binghamton.

Cattaraugus County

DR. AND MRS. JOSEPH P. GAREN, the former health commissioner of the City of Olean, were honored Sept. 26 at a farewell dinner given by a group of about thirty-five friends at the Olean House.

Dr. Garen, who has been a member of the New York State Department of Health personnel for the past three months, has been granted a fellowship to Johns-Hopkins University where he plans to study additional public health courses for about eighteen months.

Dr. J. E. K. Morris presided as toastmaster. Brief addresses were given by Mayor Fred W. Forness, Jr., Dr. E. K. Kline, county laboratory director, who gave an alphabetic analysis of Dr. Garen's name.

Cayuga County

THE REGULAR MONTHLY meeting of the Woman's Auxiliary of the Cayuga County Medical Society was held at the Auburn City Hospital, Sept. 24, 18 members being present.

Columbia County

THE ANNUAL MEETING of the Columbia County Medical Society was held on Oct.

7 at the Hudson City hospital and was well attended. The meeting opened with a business session at 10:30 a.m. at which the election of officers took place with the following results: *President*—Dr. Hugh G. Henry, Germantown. *Vice Pres*—Dr. Robert Bowerhan, Copake. *Sect.-Treas*—Dr. H. C. Galster, Hudson, re-elected.

Dr. Frederick Hargrave, of Kinderhook, the retiring president, gave the president's address and the meeting adjourned for luncheon.

Genesee County

DR. FLOYD S. WINSLOW of Rochester, president of the Medical Society of the State of New York, gave an address at the Hotel Richmond, at a joint meeting of the Genesee County Medical Association and the Genesee County Bar Association in Batavia, Oct. 6.

Dr. Winslow's address was largely taken up with his experiences in coroner's work and investigation by the police department and county officials. There were sixty present. Among the guests were Justice Alonzo G. Hinkley of Buffalo, who is presiding at the present term of Supreme Court, and Raymond C. Vaughan of Buffalo, Republican candidate for justice of the Supreme Court.

Herkimer County

THE MEDICAL SOCIETY of the County of Herkimer met on Oct. 13 at the Mayfair, Middleville road, for the regular monthly session. Papers were read by Dr. J. J. McEvilly, first vice president, and Dr. G. A. Burgin, third vice president.

Jefferson County

A LUNCHEON, SPONSORED by the Jefferson County Medical Society to introduce an educational program designed to further the knowledge of social diseases, was held in the Black River Valley club on Oct. 5 with about 125 persons in attendance.

Various public officials including health officers were present. The luncheon was open to the public. Dr. George S. Bock, chairman of the public health committee of the county society, presided and introduced the speakers.

Kings County

PUBLIC HEALTH IS A secondary consid-

eration in the Pure Food and Drug Administration, asserted Dr Charles Solomon, chairman of the subcommittee on drugs of the Kings County Medical Society, on Oct. 13 in a talk at the Brooklyn Bureau of Charities Auditorium, 293 Schermerhorn St.

"Because of its legal limitations," said Dr Solomon, "the Pure Food and Drug Administration is powerless to protect the public from fraudulent nostrums. The law covers labels only, not general advertising. Cosmetics and obesity cures do not come under Federal supervision, even in interstate commerce, except as they make therapeutic claims."

He attacked a ruling of the Supreme Court which, he said, makes it possible for a manufacturer of a harmful patent medicine to escape punishment when no fraudulent designs can be proved.

The talk was given under the auspices of the Red Hook-Gowanus Health Center of New York City Health Department, Dr Leopold M. Rohr, health officer of the district, introduced Dr Solomon.

Monroe County

DR FLOYD S. WINSLOW, President of the State Society, acted as "guest editor" of the Rochester *Journal* for a day on October 6, and wrote an editorial on "The Doctor and the Public." He confessed that the doctors have been backward in teaching the public how to combat disease, and added:

But 'times change, and with them customs.' The medical profession is becoming vocal. Whereas it was formerly considered undignified for the doctor to address himself to the 'lay' public, we now feel that this is a most valuable contribution for us to make to the public welfare.

So the public may look for us in the future to explain more than we have in the past about what we are doing and planning. We may not always be as talented at telling as we might wish, but our friends, the newspapermen, will help us, I am sure. This will make us better doctors, and I suspect it will make the public better patients, too.

Readers sometimes come to a newspaper office to "lick the editor," and it is perhaps with this in mind that the *Journal* closes a colorful description of Dr Winslow by remarking that "one of his favorite feats of strength is driving a spike through a two-by-four with his bare hand as a hammer."

DR THERON W. KILMER, police surgeon at Hempstead, L. I., was guest speaker at a meeting of the Monroe County Medical Association in the Academy of Medicine Building on Oct. 13.

Doctor Theron, who is a member of the International Association of Police and Fire Surgeons and the International Identification Association, discussed the medical aspects of the drunken driver problem. Preceding the meeting, he was guest at a dinner in the University Club given by the society.

PLANS TO ENLIST THE active cooperation of every physician and nurse in the city and county in an educational project to combat communicable diseases were discussed at conferences of the County Medical Society, state and local health departments and the Tuberculosis and Health Association in Rochester on Oct. 6.

Among the activities to be carried on under medical society sponsorship, are a series of five Sunday afternoon lecture demonstrations on cancer and public meetings on syphilis control and tuberculosis prevention.

Dr William A. Brumfield Jr. of the State Department of Health, was the principal speaker at a joint conference of Monroe County and Rochester health officers and public health nurses at the Academy of Medicine in the evening.

Nassau County

PARALYSIS WHICH COMES from alcoholic addiction is caused by a deficiency in Vitamin B and can be corrected by abnormal dosage of that vitamin, Dr C. N. Colbert, psychiatrist at the Bellevue hospital told the Medical society of Nassau county in the Bar Association home, Mineola, on Sept. 29.

Introduced by Dr Louis H. Bauer, vice president of the society, Dr Colbert said in part, "In order to overcome the nervous disorders of these alcohol addicts, it was found necessary to give the victims four times the normal amounts of vitamin B. The vitamin regime was found efficacious even when the patient received between a pint and a quart of liquor a day."

New York County

WORLD-WIDE TRIBUTES, including a letter from President Roosevelt, to Dr William H. Park, retired director of the city's Bureau of Laboratories, were read on Oct. 6 at the dedication of the eight-story, \$700,000 William Hallock Park Laboratory, named in his honor, at the foot of East Sixteenth Street.

Mayor La Guardia, one of eleven speakers at the dedication, said it was difficult to get legislative appropriations for research laboratories, because "microbes don't vote." He disclosed, however, that when

he applied for a PWA loan for the new laboratory the application went through more speedily than other project applications totaling \$147,000,000, for which he had sometimes been criticized.

THE 439TH REGULAR meeting of the Society of Medical Jurisprudence was held at the New York Academy of Medicine on October 12. A paper was read on "Some Medico-legal Problems," by Karl M Bowman, M D, director, Division of Psychiatry, Bellevue Hospital and Hospitals of Greater New York.

Niagara County

DR. RUSSELL L CECIL of New York City gave an address on Pneumonia at a meeting of the Niagara County Medical society, on Oct. 13 at the Cataract House in Niagara Falls

Oneida County

DR. F M MILLER, member of the economics committee of the State Medical Society explained to Oneida County and neighboring county medical groups in Utica on Oct. 7 the stand of the state society on group hospital and health insurance.

ONEIDA COUNTY MEDICAL Society heard two scientific papers at a luncheon meeting Oct. 13 in Broadacres Sanatorium

Dr C H Baldwin spoke on "Tuberculosis of the Bones and Joints" and Dr J J Witt on "Tuberculosis in Children."

Onondaga County

DR. M A. OBREMSKI, also an outstanding amateur photographer, gave an address on "Infra-red Photography in Medicine" at a meeting of the Onondaga Medical Society in the University club, Syracuse, on Oct. 6

Dr Harold J Barnes of Brooklyn, president of the American Association of Medical Milk commissions, spoke on "Certified Milk and the Medical Profession"

Ontario County

DR. CHAUNCEY W GROVE of Geneva is the new president of the Ontario County Medical Society, elected at the annual meeting at Wenna Kenna, east shore of Canandaigua lake, on Oct. 13. He succeeds Dr Walter S Thomas of Clifton Springs. The new vice president is Dr Frederick C McClellan of Canandaigua and Dr Daniel A Eiselme of Shortsville was elected secretary and treasurer for the 40th consecutive term.

Drs Malcolm R Blakeslee of Shortsville, Joseph S Morabite of Geneva and A. G

Odell of Clifton Springs were named as members of the Board of Censors and Dr H J Knickerbocker of Geneva was elected delegate to the state convention with Dr M D Dickinson of Geneva alternate.

The next quarterly meeting will be held in Canandaigua on Jan 14

DR. C HARVEY JEWETT entertained Canandaigua Medical Society on Oct 1 at his home on North Main Street. Dr Leon A. Stetson read a paper on "The Leopard Changes His Spots"

Oswego County

THE NEGOTIATIONS BETWEEN the physicians of Oswego and the Mayor over the care of welfare patients reached a point on Oct. 10 when the Oswego Academy of Medicine sent the following communication, signed by Drs J F Burden, J T Dwyer, and C K. Elder, to President Taylor of the Welfare Department

Since Jan. 1, 1936, the physicians of the Oswego Academy of Medicine, have negotiated with the D P W in an effort to secure an amicable agreement in regard to fees for services rendered welfare patients in the Oswego hospital.

The efforts directed toward the adjustment of this matter have been unsuccessful

It is the consensus of opinion of the physicians that in view of the fact that we have for years carried on this work, largely without recompense, that due to existing economic conditions, we no longer feel that it is possible, or expedient, to continue to serve the D.P.W. without remuneration.

At a meeting of the Oswego Academy of Medicine, it was agreed that on and after twelve o'clock noon, on October 10, 1936, that no physician or surgeon will perform any professional services at the Oswego hospital in caring for welfare cases, unless a written authorization from the D P W., for the same be given the attending physician. The charges for services to welfare cases are to be based on prevailing rates, as charged private individuals in the community

Queens County

DR. JOHN L RICE, Health Commissioner, laid the cornerstone on Sept. 28 of the Astoria-Long Island City Health Center at Thirty-first Avenue and Fourteenth Street, Astoria, Queens. Dr James M Dobbins, president of the Medical Society of Queens, John J Halleran, acting Borough President of Queens, and Dr Margaret Barnard participated in the ceremonies

Mr Halleran, speaking at a luncheon given in celebration of the event by the Queens Chamber of Commerce and the Department of Health, at the rooms of the Chamber of Commerce of Long Island City, said that records of the Health De-

partment indicated that Queens was the healthiest county in the country. Commissioner Rice said that he hoped to see the time when nobody in Queens ever would be sick. Preventive medicine would hasten that time, he said, and the establishment of the Health Center was a step forward.

Other speakers were Dr Dobbins, Dr Luther Woodward and George Spargo. Dr H P Mencken presided.

THE WOMEN'S AUXILIARY of the Medical Society of the County of Queens held a luncheon bridge at the Amber Lantern, Flushing, on Oct 14. The Auxiliary also plans a luncheon, fashion show and bridge for the women attending the meeting of the Second District Branch of the State Medical Society on Nov 19. The gala Armistice Eve Dance will be held this year on the Starlight Roof of the Waldorf-Astoria, Manhattan.

Suffolk County

THE NEGOTIATIONS IN PROGRESS in various counties around the state on medical welfare work gave interest to a meeting of the Comitia Minora of the Suffolk County Medical Society on Sept 16. Welfare Commissioner Irving Williams was present by invitation. Dr Stakes, of the Medical Economics Committee, cited the following regulations which were unsatisfactory to the Economics Committee:

1 Restriction of number of visits to Welfare patients in hospitals to three visits a week.

2 Fees for Maternity Cases in which it is impossible for the specified number of pre-natal visits to be made.

3 Fees for tonsil operations.

4 Policy of Deputy Welfare Officers shopping around to obtain rates lower than those considered fair by the County Medical Society.

Tioga County

DR LOUIS D HYDE, of Owego, was nominated for president of the Tioga County Medical Society for the ensuing year at the annual Ladies' Day luncheon of the organization which was held on Sept 29 at the Iron Kettle Inn, Waverly. Dr Hyde is the present president.

All of the present officers were renominated. They include, beside Dr Hyde the following:

Dr Corbet S Johnson, of Spencer, vice-president.

Dr Ivan N Peterson, of Owego, secretary and treasurer.

The annual election will be held at the December meeting of the Society. A ladies' auxiliary is being formed.

Warren County

DR. LEONARD A HULSEBOSCH of Glens

Falls was re-elected president of the Warren County Medical Society at a meeting in The Queensbury at Glens Falls on Oct 8. Dr Edwin B Jenks of Bolton Landing was named vice president to succeed Dr George Bibby of Pottersville and Dr Morris Maslon of Glens Falls was re-elected secretary treasurer.

Dr B J Singleton was elected chairman of the Board of Censors, while Dr Stanley Edmunds and Dr E D B Elliott were also elected to the Board.

Several new members were admitted to the society and a resolution was adopted requesting the Warren County Board of Supervisors to engage the services of three public health nurses for the county.

Dr Felix A Schrenk and Dr Suzanne Schrenk of Glens Falls, husband and wife, were among those admitted.

Washington County

MEMBERS OF THE Washington County Medical Society, at their annual meeting Oct 6 in the Hudson Falls Court House, elected Dr John H Ring of Granville president. He succeeds Dr Edward V Farrell of Whitehall.

The meeting marked the election of Dr D M Vickers of Cambridge as secretary to succeed Dr Silas J Banker of Fort Edward. Dr Banker, holder of that office for thirty consecutive years, asked to be replaced. The society voted to make a permanent record in the society's minutes concerning his faithful duties.

Westchester County

ORGANIZATION OF CITIZENS advisory committees for the three-cents-a-day plan for hospital care in various key communities in Westchester County has been started. Representatives of the medical profession in every community will be invited to serve on the committees.

The first of these committees was started at Peekskill on September 23. Dr Franklin Kessler and Dr Bernard Loewy are members of the Peekskill committee.

The purpose of the committees, according to Hamilton Clarke, Westchester representative of the Associated Hospital Service of New York, is to broaden community interest in the plan, suggest ways of improving service, and to provide liaison between the plan and the public.

More than 15,000 Westchester residents are enrolled in this non-profit hospital plan, and nearly 1,000 have been hospitalized in Westchester.

All of the fifteen voluntary hospitals in the county offer the service to subscribers.

Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

Physicians—Compensation—Requirement of License

An unusual case involving the rights of a person not licensed to practice medicine with respect to the use of a secret formula for the treatment of disease was recently decided by the Courts of a neighboring jurisdiction.*

The plaintiff in the action, a certain K. claimed to have discovered a formula or compound in the form of a paste, which he asserted to be a remedy for a certain specific disease. The salve was one to be administered by burning or melting in order that fumes and gases so released would take effect through the skin and pores of the body. K. claimed that he was the sole possessor of the secret formula for the remedy in question.

It seems that a certain A. sought out K. in connection with the possible use of the compound for himself, his wife, and children, and that K. furnished to him a quantity of the substance with instructions for its use and application in the treatment of the disease.

The transaction became the source of litigation when K. sought to recover a contracted fee from A. An action was brought by him to recover the sum of \$1,035. In his complaint or petition he made a preliminary statement as to his claimed ownership of the secret formula, and as to the fact that he was its discoverer. He, however, omitted any allegation to the effect that he was licensed or in any way qualified to engage in the practice of medicine.

His complaint averred that the contract which he had entered into with A. was in substance as follows: That K. would furnish sufficient quantities of the compound to treat A. and his family, and would provide directions as to the use of the preparation, that the defendant was to pay \$1,400, half of which was to be paid upon delivery of the remedy and the other half when the recipients of the treatment were found to be negative as to the disease.

The plaintiff charged that partial payment of the first half of the amount was all that had been paid. He asserted that before the use of the drug the patients had undergone scientific tests which had established that they had been afflicted with

the disease, but that after treatment additional tests being negative showed they were no longer suffering from the ailment. The complaint sought to recover from A. the balance due as his claimed contracted fee.

The defendant made an application to the Court to dismiss plaintiff's petition on the grounds that the plaintiff had no legal right to bring the suit, and that the petition did not state facts sufficient to constitute a cause of action. The Court ruled in favor of the defendant upon his application, and judgment was entered in his favor.

The plaintiff took an appeal from the ruling of the lower Court with the final result that the Appellate Court affirmed the said decision.

The pertinent section of the statute which defined the statute of medicine in that jurisdiction was as follows:

A person shall be regarded as practicing medicine*** within the meaning of this chapter who*** diagnoses for a fee or compensation of any kind, or prescribes, advises, recommends, administers or dispenses for a fee or compensation of any kind, direct or indirect, a drug or medicine, appliance, application, operation or treatment of whatever nature for the cure or relief of a disease.

It should be noted that the said definition of the practice of medicine is in effect similar to the New York statute which provides as follows:

***A person practices medicine within the meaning of this article, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition.

Similar to the provisions of the New York statute the law of the jurisdiction in question provides specific penalties for the practice of medicine by anyone not properly licensed.

The Appellate Court determined that from the very terms of the plaintiff's own petition he agreed to furnish to the defendant a medical compound with directions

*Katsafaros v. Agathakos, 3 N. E. 2nd, 810

for its use in connection with the treatment of a specific disease. Such conduct it determined amounted to the practice of medicine and since there was no allegation in the petition that the plaintiff had ever received any certificate authorizing him to practice medicine the Court ruled that the acts which formed the basis of his complaint amounted to a violation of the law.

The Court in the course of its opinion discussed at some length the constitutional questions involved and determined that there was no violation of the plaintiff's constitutional rights which stood in the way of his being denied a cause of action by the statutes regulating the practice of medicine. In that connection the Court said in part:

The right to labor and enjoy the rewards thereof is a natural right which may not be unreasonably interfered with by the Legislature. Where, however, the pursuit concerns, in a direct manner, the public health and welfare and is of such a character as to require a special course of study or training, or experience, to qualify one to pursue such occupation with safety to the public interest, it is within the competency of the general assembly to enact reasonable regulations to protect the public against evils which may result from incapacity and ignorance*** The police power manifestly extends to the protection of life, limbs, health, comfort and the quiet of all persons and the protection of all property within the State. By this police power of the State persons and property are subjected to all kinds of restraints and burdens in order to secure the general comfort, health and prosperity of the State.

The Court came to the final conclusion that since the plaintiff's petition indicated that the basis of the contract for professional services was the practice of medicine without a license and that the contract was void because the consideration was illegal. Therefore the judgment appealed from was affirmed.

The ruling seems to be completely in accord with the language contained in a recent opinion handed down by our Court of Appeals* in which the Court said:

If it should appear upon the trial of this case that this agreement called for treatment by the deceased of the plaintiff for a disease, and that he was not a licensed physician, then the consideration, or part of it, for D's promise being illegal, the contract was void.

Alleged Improper Physical Examination

A middle aged woman received certain injuries while on shipboard. During the

completion of the cruise, first aid was rendered to her by the ship physician assisted by the stewardess. The officials of the shipping company arranged by radio for a doctor engaged in general practice to meet the ship when it arrived in port and make a physical examination of the woman for the purpose of ascertaining the nature and extent of her injuries. He appeared at the appointed time and went to the woman's cabin and made a general physical examination of her which included a rectal examination. It appeared, without the use of x-rays, that there was a possible fracture of the ankle and there appeared to be no basis of complaint with respect to pelvic injuries. Subsequent thereto, the doctor who made the examination rendered the woman no treatment and she left the ship and went under the care of her personal physician.

Thereafter, she instituted the suit against the shipping company and against the doctor who had made the physical examination at its request. While her claim against the shipping company included charges that it was responsible for her originally having sustained her injuries, her claim against the doctor was confined to charges that his physical examination had been improperly performed by him so as to aggravate her injuries, and had been made in the presence of a lay person thereby causing her humiliation.

Upon the trial of the action, the libellant undertook to testify that at the time the respondent doctor made the physical examination he was accompanied by a person representing the Claim Department of the Steamship Company and that he represented such person to be a doctor and that when the rectal examination was performed she was exposed to the view of the said lay person.

The doctor, however, testified that the examination was made by him in the usual manner and that those who were present, besides himself and the woman, were the Ship's doctor and a stewardess. There was no medical testimony which in any way showed that the examination which the respondent performed harmed the libellant, or in any way aggravated her condition.

The Court (a Court of Admiralty without a jury) ruled that the libellant had failed to make out her cause of action against the respondent doctor, thereby exonerating him of the charges that he had improperly conducted a physical examination. As to her causes of action against the Steamship Company, the Court also ruled against the libellant's claims.

*Brearton v. DeWitt, 252 N. Y. 495

Across the Desk

De Senectute 1936 Version

THE STORY IS TOLD of a chipper old retired Maine sea-captain of ninety-five summers who needed a fresh supply of tobacco for his pipe and asked his son, a young man of seventy-five, to get it for him. The son had a job of wood-chopping to do up in the back lot, so he asked his son, aged fifty-five, to get it, as he was going to the village anyway. At nightfall the grandson returned. "Where's my baccy?" shouted the old captain. "I'm sorry, grampa, I forgot it," said his grandson. "That's the h— of sending a boy," roared the old salt. "Next time I'll go myself."

Some such family age situation as this is now developing all over the country as the horizons of life-expectancy are pushed back farther and farther by medical science. We "point with pride," as the political spellbinders and welkin-ringers say, to the fifteen years added to the span of life in the last few decades. But do we stop to think what these added years mean in our family life? They may sometimes produce serious results. To add fifteen years to human life is splendid. A grand achievement. But all the effects of this temporary repulse of the grim reaper may not be equally fine. Statisticians say it means that our population will shift more and more into the "higher age brackets," an expression that leaves nearly everybody cold, not caring especially what brackets the population are in, if any.

Maybe they will sit up and take a little notice, however, if we translate it into everyday language, and say it means that we shall have a vast army of the aged, who will be saddled for care and support upon their children in the fifty and sixty year "brackets," no longer very well able to bear the burden. That this is no idle fancy is revealed by the astounding strength of the Townsend crusade for old-age pensions and the powerful movement for "old-age security." Such seismic disturbances do not happen without strong underlying causes, and the underlying cause here is the rapidly growing body of aged folk now demanding care.

Staying With Grandpa

It means that all over the land married couples who gave their early years to bringing up their children must now give up their later years to caring for their parents. It means that no time will ever come when such people will be free to lead their own lives and come and go as they like. When it is no longer, "Somebody must stay with the baby," then it is "Somebody must stay with grandpa." True, grandpa and grandma can be nicely cared for in a nursing home, where they will have every comfort and attention, but the cost ranges from \$25 to \$75 a week each, and up, which is beyond the purse of the man whose own hair is already tinged with the early frosts of age. The sons and daughters love those old people and are loyal to them, and so they buckle down to harder effort, make the old suits, hats and shoes do for another year, give up the trips to Europe, Florida, and California, and remain in loving bondage. But the situation is there just the same, and the more the miracles of medicine stave off the inevitable last debt to nature, the worse it will become.

Many of the very aged, it is true, are remarkably "chipper." They like to sally out for automobile rides or watch the flickering films at the movies. They joke and laugh with the young folks. But many, many others are in unending bodily misery or lead a half-alive, vegetable existence, partly blind and deaf, little aware of what is going on, in a dotage that is merely a distress to everybody. Here we see the reason for the enthusiastic support of any and every plan for old-age "security" and pensions.

"Security" on a Dollar a Day

The Townsend plan to give all the old folks \$200 a month apiece seems ridiculous to many critics because it is so high. But what about the "sane" and "practical" plans that have been worked out by the great minds in our halls of legislation and actually made law? The men of wisdom and sagacity at Washington and at the various

state capitals have provided "security" for the aged—and what do they get? Well, it appears that if the old fellows have succeeded in reaching sixty-five without a relative in the world who is worth a penny, then they are to get \$25 a month, or a little less than \$6 a week for room and board, clothing and any luxuries and hoopla that may occur to their minds. How this sum was arrived at is a mystery, unless it represents a saving over keeping them in the poor-house. All that can be said about it is that the oncoming tidal wave of feeling evident everywhere for adequate provision for the aged is likely to make our legislators think again, and think better.

A Happier Angle of It

Another feature of the prolongation of life that is happily a bit more cheerful is the fact that there is a corresponding prolongation of strength and energy into the "brackets" where formerly men had come to the end of their usefulness. Disregarding the intellectual pursuits, where the human brain has always seemed strangely ageless, no one can very well fail to notice the many workers with snowy hair successfully operating, for instance, our great railway trains which equal, if not surpass, any others in the world. This scribe was not long ago on a local train upstate where every member of the crew looked over sixty. While we are pridefully pointing to longer life, why not point with even more gusto to longer efficiency, longer ability, and vigor? Perhaps we discover here a reason why so many of the younger men cannot seem to

find work. The old fellows may be sticking to their posts ten years longer than they used to, preserved in health by the new discoveries of medicine. An elderly man in good physical fettle with years of experience and background is at least as good as a brash youngster who still has all his mistakes ahead of him, and the employers may be keeping the veterans on.

No Soft-Headed Sentimentality About It

Enough has been said, anyway, to indicate that we are in the midst of a great social readjustment in our family and business life, caused by the achievements of medical science. No one for a moment would regret them, or wish to cancel them, but we must face and solve successfully the problems they bring. No one would adopt the rough-and-ready plans of the Napoleonic economists who ordered the millions of little pigs slaughtered and the vast acreage of crops plowed under. The "children" of fifty, sixty and even seventy love their parents and wish to keep them as long as they can, but at the same time we have here a big national problem that will grow even larger with the inevitable advance of medical progress. The demand now for "old-age security" will be a mere whisper compared with the one twenty or thirty years from now. And no starvation dole of a dollar a day will do, either. People who imagine that this demand is just a soft-hearted or soft-headed piece of socialistic sentimentality will find that it is founded on the granite basis of facts, and that "facts are stubborn things." And the doctors are the men who started it.

"Are We Growing Bigger?" We Are

THIS QUESTION is the title of two articles, one in the *British Medical Journal* of June 6, and the other in the *Journal of the A.M.A.* of September 26. It is of course common knowledge that we are gaining in height and weight from generation to generation, but not everyone knows how much. Well, it appears that the boys and girls entering college now seem to average two inches taller and seven pounds heavier than their parents and grandparents did who entered the same schools. Measurements abroad tell the same story. Recruits in various European armies show a gain of one and one-half to four inches in average height in seventy years.

The growth in the height of college students in America is not uniform, but is continuous—there has been "a marked annual increase," amounting to approximately one centimeter, or 4 inch, every twelve and one-half years. Male students have shown a mean annual increase of .21 pounds during the past fifty years. Men, we are informed, "are today getting taller and slenderer, even though in absolute weight they exceed their parents." For the college women studied the mean increase in stature of the daughters over their mothers was 293 c.m. (1 $\frac{1}{8}$ in). The mean weight of the daughters was four pounds over that of the mothers in the group.

studied." The causes are uncertain, but some of those mentioned are better medical attention, better food, and more exercise. The mating of the improved stock brings still more improvement.

Imagination is at liberty to run riot in dreams of what the race may be like in another thousand years if these trends go on. You and I would then seem mere whipper-snappers. The "mean weight" of the daughters of that distant time may be terrible to contemplate. Take it all in all, and by and large, and around and about, the M.D.'s seem to be Burbanking the poor

old human race so completely that ere long it won't be able to recognize itself. Happily the changes so far seem to be mostly for the good, but when that "regimenting" of the doctors gets hold that we hear so much about, and the Great American Dictator mounts his throne, then all the improvements may be made on the folks who cast the right party ballot, and all the handicaps grafted on the opposition voters. A thousand other possibilities race through the fevered fancy, but perhaps they are better left to the mind of the reader.

RED CROSS ROLL CALL—NOVEMBER 11-26

From Armistice Day to Thanksgiving is the period very appropriately chosen for the annual Red Cross "roll call," which hopes to enlist 5,000,000 members.

The American Red Cross has helped the victims of 138 disasters in the past year, providing food, shelter, clothing, and medical care and assisting those families without resources to rebuild, repair, and refurnish their homes. No one knows where the next disaster will strike, but everyone can have a part in helping those who will be injured or made homeless by enrolling as a member in their local Red Cross Chapter during the annual Roll Call.

More than 80,000 persons were taught life saving and artificial respiration by the Red Cross last year. Red Cross public health nurses made more than a million visits to persons ill in their homes last year and taught 50,000 women and girls how to give intelligent bedside care by class instruction in Home Hygiene and Care of the Sick. Public health nursing service, disaster relief, first aid and life saving, assistance to veterans, and all other Red Cross activities are maintained by the membership dues. Not for several years has this great volunteer organization been called upon to give as large a measure of aid as during the Spring Floods and Tornadoes of 1936, when 200 counties in twenty eastern States were affected almost simultaneously. Despite the magnitude of the task, the Red Cross was able, by virtue of its countrywide organization of 12,700 Chapters and Branches and a trained national disaster staff, to meet the emergency needs of victims promptly, providing food, temporary shelter, clothing or medical care for more than 145,000

families. After this first help was given, the Red Cross stayed on the job to assist those families without resources to rebuild, repair, and refurnish their stricken homes.

The American people responded generously to the nationwide Red Cross appeal for funds to help the disaster victims, giving more than \$7,000,000 in a few weeks time, but this money would have been of little help in meeting the emergency if there had not been a competent agency like the Red Cross, able and ready to administer relief.

Last year the Red Cross started out to give aid to the victims of another type of disaster—highway disasters—which take an average daily toll of more than 100 lives and cause injury to nearly three times that number. To reduce death and needless suffering from highway accidents the Red Cross initiated a system of Highway Emergency First Aid Stations, now numbering more than 1000, along major routes of traffic to give intelligent help to accident victims before the doctor comes.

These emergency first aid stations are located outside of towns and cities, where medical aid and hospital facilities are at a minimum. Existing highway facilities, such as garages, filling stations, wayside inns, and State Police sub-stations are used. At least two persons at each station receive the standard training in first aid, and the station is provided with the necessary equipment and marked by an appropriate roadside sign.

The first aider cannot and does not attempt to render the services of a physician, but in many instances this layman's immediate assistance gives the doctor instead of the undertaker a client.

state capitals have provided "security" for the aged—and what do they get? Well, it appears that if the old fellows have succeeded in reaching sixty-five without a relative in the world who is worth a penny, then they are to get \$25 a month, or a little less than \$6 a week for room and board, clothing and any luxuries and hoopla that may occur to their minds. How this sum was arrived at is a mystery, unless it represents a saving over keeping them in the poor-house. All that can be said about it is that the oncoming tidal wave of feeling evident everywhere for adequate provision for the aged is likely to make our legislators think again, and think better.

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American Martyrs to Science Through the Roentgen Rays. By Percy Brown, M D Octavo of 276 pages, illustrated Springfield, Charles C Thomas, 1936 Cloth, \$3 50

In prefacing such a book as Dr Brown has produced, the title of the first chapter "The Cause and the Effect" is very appropriate.

A brief review of the causation of the pathological changes bringing about the results from over-exposure of human tissue by the roentgen rays and the description of these changes has been well expressed.

The greater part of the book is, as its title implies, biographic sketches of those early workers with the x-ray who died as the result of injuries obtained in the course of that work. It is to be noted that practically every one of this group of pioneers contributed much to the early development of roentgenology.

The whole book is not only a fitting tribute to these early workers with x-ray but is inspirational in showing the difficulties and handicaps under which the early workers in this branch labored and the large amount of important and scientific knowledge they gave to the world.

CHARLES EASTMOND
The Hair and Scalp A Clinical Study with a chapter on Hirsuties By Agnes Savill, M D Octavo of 288 pages, illustrated Baltimore, William Wood & Company 1935 Cloth, \$5 00

Although these subjects are treated in the usual texts on Dermatology, very few authoritative books have been written on the subject alone, or go into the matter in such detail as this one.

Dr Savill is particularly interested in the hair and scalp and their diseases, and has devoted many years to study and research in this particular field. Her book covers the subject thoroughly.

As Dr Savill states, the common diseases of the scalp and hair apparently so simple, prove to be some of the most puzzling problems of medicine and warrant more attention by the practitioner of medicine. While some of these maladies may be deemed trivial by the doctor they are of major importance to the sufferers and unless the doctor will give advice and treatment to these patients, they will seek advice elsewhere.

Dr Savill goes into detail on such subjects as brushing, washing and care of the hair and scalp. Hair fall, itching of the scalp, scaly condition of the scalp all of which should be treated by the doctor, are discussed and valuable information is given. A chapter on the Molecular structure and elastic properties of the hair by T W Astbury is both interesting and instructive.

This book is the most authoritative and detailed work on the hair and scalp published in some time. Not only dermatologists but every doctor will profit by reading it.

ALFRED POTTER
The Human Foot. Its Evolution, Physiology and Functional Disorders By Dudley J Morton. Octavo of 244 pages, illustrated. New York, Columbia University Press, 1935 Cloth, \$3 00

The author of this work needs no introduction to the orthopedist, for his research has spared no efforts in opening up new avenues in the study of the human foot.

This work covers very extensively and painstakingly the evolution, physiology and pathology of the foot. The mechanics of the foot in standing, walking and running, and their relations to body posture are covered most thoroughly.

A machine called, "The Staticometer" is illustrated and explained in the study of weight distribution and foot posture in stance.

The author stresses the importance of x-ray examination in all functional disorders of the feet and states that, "the most important physiological evidence to be obtained from the x-ray examination pertains to the distribution of weight upon the fifth metatarsal segment." He also stresses the importance of two views for study. Every important ailment of the foot is discussed in this work and the kind of foot wear to select is also advised.

JOSEPH I NEVINS
Medical Mycology Fungous Diseases of Men and Other Mammals By Carroll Williams Dodge, Ph D Quarto of 900 pages, illustrated. St. Louis, The C V Mosby Company 1935 Cloth, \$10 00

This book is primarily for botanists and others interested in having an excellent source of reference for the description and classification of fungi. The author, a recognized authority in this field, has written a text of nine hundred pages which includes an unusually complete bibliography of the existing literature through the first half of 1934, and a large number of illustrations. The chapters dealing with the general morphology and physiology of fungi, as well as those describing methods of isolation and microscopy, should prove valuable reading to all who are interested in pathogenic organisms. The discussion of the Trichophytaceae is a helpful account of the lesions produced by this widely distributed group of fungi, the etiological agents responsible for many of the infections caused in man.

The book is not for the general practitioner. It ought to be of considerable help

Books

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RECEIVED

Cooperative Democracy Through Voluntary Association of the People as Consumers A Discussion of the Cooperative Movement, Its Philosophy, Methods, Accomplishments, and Possibilities, and Its Relation to the State, to Science, Art, and Commerce, and to Other Systems of Economic Organization By James Peter Warbasse. Third edition, completely rewritten Octavo of 285 pages New York, Harper & Brothers Publishers, 1936 Cloth, \$1 50

Medicine and Mankind Edited by Iago Galdston, M D Lectures to the Laity delivered at the New York Academy of Medicine Duodecimo of 216 pages New York, D Appleton-Century Company, Inc., 1936 Cloth, \$2 00

A Diabetic Manual for Practitioners and Patients By Edward L Bortz, M D Octavo of 222 pages, illustrated Philadelphia, F A Davis Co, 1936 Cloth

Chemical Procedures for Clinical Laboratories By Marjorie R Mattice, A B Octavo of 520 pages, illustrated Philadelphia, Lea & Febiger, 1936 Cloth, \$6 50

A Text-Book of Neuro-Anatomy By Albert Kuntz, M D Second edition, thoroughly revised Octavo of 519 pages, illustrated Philadelphia, Lea & Febiger, 1936 Cloth, \$6 00

Microbiology and Pathology for Nurses By Charles F Carter, M D Octavo of 682 pages, illustrated St Louis, The C V Mosby Company, 1936 Cloth, \$3 00

An Introduction to Materia Medica and Pharmacology By Hugh A McGuigan, M D, and Edith P Brodie, R N Octavo of 580 pages, illustrated St. Louis, The C V Mosby Company, 1936 Cloth, \$2 75

An American Doctor's Odyssey Adventures in Forty five Countries By Victor Heiser, M D Octavo of 544 pages New York, W W Norton & Company, Inc., 1936 Cloth, \$3 50

Squint Training By M A Pugh, M R. C S Octavo of 117 pages, illustrated New York, Oxford University Press, 1936 Cloth, \$2 75

A Textbook of Pathology By W G MacCallum. Sixth edition, entirely reset. Octavo of 1277 pages, illustrated Philadelphia, W B Saunders Company, 1936 Cloth, \$10 00

Tissue Immunity By Reuben L Kahn, M S Octavo of 707 pages, illustrated. Springfield, Charles C Thomas, 1936 Cloth, \$7 50

An Introduction to Psychological Medicine By R. G Gordon, M D, N G Harris, M D & J R. Rees, M D Octavo of 386 pages New York, Oxford University Press, 1936 Cloth

Facts and Phagocytes The Story of the Development of Hydrochloric Acid Therapy By Burr Ferguson, M D Octavo of 270 pages, illustrated Youngstown, Medical Success Press, 1936 Cloth, \$5 00

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As a service exclusive to our readers books published in this country may be ordered through the Business and Editorial Offices of the Journal (33 W 42nd St., N Y C) postage prepaid Order must be accompanied by remittance covering published price.

REVIEWS

Medical Papers Dedicated to Henry Asbury Christian, Physician and Teacher Octavo of 1000 pages, illustrated Baltimore, Waverly Press, Inc 1936 Cloth, \$10 00

This Festschrift is published in honor of Professor Christian's 60th birthday—one of the outstanding clinicians of America, a man of great insight and energy, who has done so much for medical education and the training of good clinicians and clinical research workers

The list of contributors to this volume of one thousand pages are the present and past associates and house officers at the Peter Bent Brigham Hospital, and therefore a list of many of America's outstanding men of medicine. These hundred contributions are not only a great testimonial to a great man, but their numerous studies, reports, and original investigations into the causes,

diagnoses, and treatment of disease in all the departments of medicine are of great importance and merit

MEYER A. RABINOWITZ

Handbook of Surgery By Eric C Mekie, M B Duodecimo of 699 pages, illustrated Baltimore, William Wood & Company 1936 Cloth, \$4 50

This Hand-Book of Surgery accomplishes its avowed purpose as an aid to students reviewing for examinations

The contents cover the entire field of surgery in a brief but concise manner

The treatment outlined may at times be open to argument but, on the whole, is accurate and concise. As an aid to the student's notebook, or for quick reference the work is recommended

STANLEY B THOMAS



Skippy and David Explore The *New* BOOK OF KNOWLEDGE

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in laboratories where problems involving fungus infection are encountered

MORRIS L. RAKIETEN

Abortion Spontaneous and induced Medical and Social Aspects By Frederick J Taussig, M D Quarto of 536 pages, illustrated St Louis, The C V Mosby Company, 1936 Cloth, \$7 50

The author is especially qualified to write on this timely subject. His large practical experience in the diseases of women, and his work in public health matters, entitle him to speak with authority. He wrote the first special monograph on abortion in 1910, and even at that early date he strongly considered the possibilities and value of control of conception in limiting undesirable pregnancies.

This volume is the first to cover the ground with completeness and detail. It includes not only all the medical aspects of the subject, but also thoroughly discusses the social side of the question. In addition medico-legal matters are discussed at length, and one of the most interesting chapters is that which relates to abortion in animals.

The reader is at once impressed by the author's knowledge of the subject, and his ability to portray the facts in a clear, interesting and authoritative manner.

The medical profession and the public are deeply indebted to Dr Taussig for publishing such a complete volume on this very interesting problem.

WILLIAM S SMITH

A Textbook of Roentgenology The Roentgen Ray in Diagnosis and Treatment. By Bede J Michael Harrison, M B Octavo of 826 pages, illustrated Baltimore, William Wood & Company, 1936 Cloth, \$10 00

This work deals with roentgen diagnosis and therapy as applied to the various anatomical systems. The field of roentgenology has become so vast that one could not expect within a single volume a complete treatise of the many conditions included, but the author must be commended on having performed this difficult task unusually well. The section pertaining to the roentgen ray as a therapeutic agent has been given less attention than has that portion relating to diagnosis.

A very unique and desirable feature incorporated in this work is the discussion of the anatomical, physiological and pathological aspects of the many abnormal conditions treated. The text is well presented, in simple style, eliminating historical and other non-essential details.

Unfortunately, the illustrations are too few and those used lack detail and are poorly arranged, until this has been improved the book will appeal especially to those who have had some experience in roentgenology.

Well illustrated, this would undoubtedly become the most popular single volume on roentgenology.

RICHARD A. RENDICH

Recent Advances in Medicine Clinical Laboratory Therapeutic. By G E Beaumont & E C Dodds, M D Eighth edition Octavo of 450 pages, illustrated Philadelphia, P Blakiston's Son & Co, Inc. 1936 Cloth, \$5 00

The most important of the recent advances in internal medicine will be found in this deservedly popular book, lucidly described, and in sufficient detail to give the reader a working knowledge of the subject. The physician who desires to produce an artificial pneumothorax, and who has never before performed the procedure, will find here full and sufficient details. He who has been somewhat confused concerning the newer knowledge of vitamins and sex hormones, will in a few pages be given an excellent critical review of the entire subject. The reader will find a discussion of the high carbohydrate low fat diet in diabetes mellitus, the value of the urea clearance test as a criterion of renal function, details concerning the employment of the ketogenic diet in the treatment of urinary infections, and the importance of the histamine test in determining gastric acidity—to mention but a few of the multitude of subjects treated. In short space complete details of important laboratory procedures are given, and well chosen bibliographies are appended to each chapter. The book should be read by all who have not had the time or opportunity to follow up the advances in internal medicine as they have developed in recent years.

ISRAEL H. MARCUS

The Foot. By Norman C Lake, M D Octavo of 330 pages, illustrated Baltimore, William Wood & Company 1935 Cloth, \$4 50

This book is an attempt to familiarize the general practitioner with the minor ailments and treatment of foot conditions. A spread of knowledge of these lesions among the medical profession is certainly needed, but the author has described the subject perhaps too well, and for that reason, weakens his message. It is too exhaustively discussed to be of real practical value to the average practitioner.

The chapters on evolution, development, anatomy, and the evolution of footwear, although very excellent, might have been curtailed or left out for brevity and consequent clarity. This information is of value only to the deep student of the subject and is available in other thorough works on the subject. However, the book is recommended as of definite help to the general practitioner and possibly to the chiropodist.

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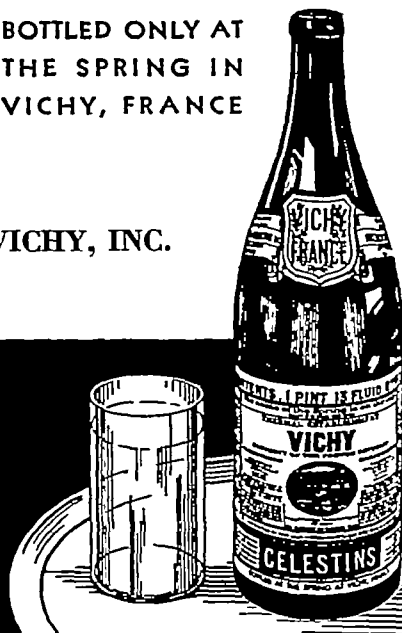
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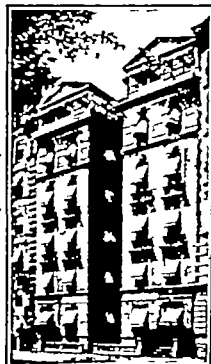
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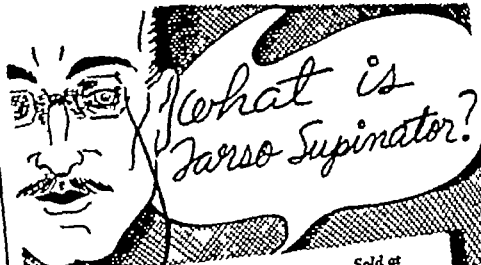
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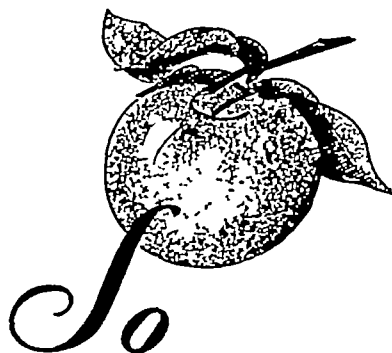
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[Classifieds continued on next page]



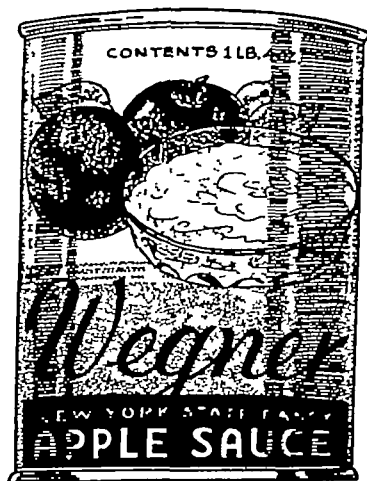
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Classified Index of Service and Supplies

(Continued)

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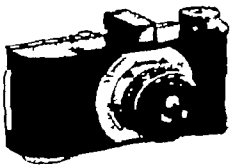
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Travel and Resorts

"U S to Learn from Indian Farmers"

"The work done a thousand years ago by the Indian farmers of the Inca Empire for the control of erosion is far in advance of anything accomplished, even in our own times, by the most progressive countries," declared Charles Collier, Special Assistant to the Chief of the Soil Conservation Service of the United States Department of Agriculture, as he sailed October 9th in the Grace Liner Santa Lucia for Valparaiso in South America.

Mr Collier, son of John Collier, Commissioner of Indian Affairs, is being sent by the Department of Agriculture to conduct a study of the erosion control work of the Incas for the purpose of obtaining information that will be useful to agriculturists here in the United States. During his stay in South America he will motor 4,500 miles through the interior of Chile, Argentina, Bolivia and Peru.

"The Incas accomplished more than any country or race in the world along the lines of land conservation and their 'staircase' farms built along the steep mountainsides are the marvel of modern engineers" Mr Collier states "Lands that the Incas protected from erosion one thousand years ago have been cultivated with fine results ever since, while sections of land in the United States have become a total wreck in 50 years. Members of the Inca Empire showed amazing knowledge not only of soil erosion and its prevention but of irrigation and of the rotation of crops—ideas now being employed in the United States for the control of erosion. The Incas were the first conservationists of the Western World. They were also interested in the preservation of wild life and of forests and allowed hunting in only one-fourth of the Empire each year."

"The little we have learned of the agricultural pursuits of the Incas has come to us from archaeologists whose main interests lie elsewhere—no extensive investigation ever has been made of their attainments along the line of soil erosion prevention. We hope to be able to learn a great deal from the Incas which we may be able to use in this country, for their Empire was probably the most efficient in the development of agriculture—and their chief concern the conservation of natural resources."

Mr Collier, accompanied by his wife and brother, Donald Collier, prominent ethnologist, sailed on the Santa Lucia to Valparaiso. After spending a week in Chile they will resume



their 4,500-mile trip by crossing to Mendoza, Argentina, then north through Argentina to Tarija, Bolivia. They will continue across Bolivia to Lake Titicaca, visit the islands of Titicaca which Mr Collier stated are said to contain marvelous examples of the control of erosion. Their last lap will carry them to Peru, across the crest of the Andes to Cuzco, Cerro de Pasco, Arequipa and end at Lima which they expect to reach towards the end of December.

The Colliers will travel in a specially equipped Ford, with extra high wheels and rear bumper, a tank capable of holding gasoline for a 500-mile drive, and extra heavy springs. Their route will take them on little known roads carrying in altitudes from sea level to 15,000 feet. They are taking 5,000 feet of color film and dozens of rolls of film for still pictures which they expect to use in connection with their research work. Mr Collier's party will probably be the first to make such a drive as there is no record of any other party ever completing a trip by car on their proposed inland route.

* * *

Seaboard Orders De Luxe Coaches

With the large addition of a half-million dollar purchase of coaches to its recent huge order for track supplies, the Seaboard Air Line Railway is preparing for a season which, officials predict, will be the biggest in the road's history. The order for ten de luxe coaches, of the very latest design and completely air-conditioned, was placed by the receivers, L. R. Powell, Jr and Henry W. Anderson, with the Pullman Car & Manufacturing Company.

The ten coaches, which will cost \$500,000.00 will be placed in service on the Seaboard, between New York and Florida, beginning early in January. On Sept 5th, Seaboard purchased 10,000 tons of rails, and large quantities of other track supplies.

* * *

Atlantic City Continues Busy

The safest bridle path in the world, a phrase frequently applied to Atlantic City's beach, was opened to equestrians this week and hundreds are already taking advantage of an opportunity to ride unhampered by motor traffic.

The famous beach, eight miles long and 100

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Colton Manor

One of Atlantic City's Finest Hotels
 Pennsylvania Ave Paul Auchter, Mgr

yards wide, is opened to horsemen every year on October 1 and continues so until June 1 Bordered on one side by the Atlantic Ocean and on the other by the Boardwalk with its towering hotels, this bridle path provides an attractive setting for a brisk canter or a leisurely ride

A number of the small carts can also be seen daily as mothers take their children, too young for riding, for a drive. Both horses and carts may be obtained at any of the ten stands situated along the beach The stands open at about 7 A M, and close at 6 P M

For those who prefer riding along the woodland paths on the mainland, there are a number of academies ready to supply horses or equipment.

That degree of safety which applies to the Beach bridle path can also be associated with the Boardwalk bicycle lane. The 'walk, running along the beach for its entire length, is open to the cyclists from 6 A M to 9 A M Hundreds of guests at the beachfront hotels have made it a practice to take a bicycle ride each morning before breakfast and the shops where wheels may be rented frequently find it impossible to meet the demand.

With the opening of the football season, this resort's amusement places have become the rendezvous of the college students and alumni to celebrate the victory or forget the defeat with an enjoyable evening

Late Saturday afternoon finds hundreds of motorists driving to the shore after the eastern college games and staying over until the following evening Hotel grilles, night clubs, theatres and ocean piers have special weekend programs and are catering to unusually large crowds

After the closing of current conventions a huge crew will get busy tearing down the exhibits and when this is completed, start laying the turf for the indoor football games So large is the main hall of the great building that a full-sized gridiron can be laid out with room still remaining for a seating capacity of 15,000

The featured games in the hall this year will find Pennsylvania Military College as the host of both occasions The first is with the University of Delaware on November 7 and the second with LaSalle College on November 11 The military school will also stage a uniformed drill with men and horses on both nights

Meanwhile preparations are being completed for the start of the tenth annual open forum at the Community Center The first speaker on the program is Amelia Earhart, who speaks on November 8. She will be followed by Dr Stephen S Wise, president of the World

Jewish Congress, Elmer Rice, famous playwright, producer and author, Upton Close, radio commentator, Carlton Beals, journalist and world traveler, General Smedley D Butler, former fiery leader of the United States Marines, and Dr Emil Lengyel, popular lecturer on European affairs. There will also be a series of plays by the Philadelphia Guild Players.

The good weather finds a particularly large number of visiting equestrians out on the beach taking advantage of an opportunity to ride along the "safest bridle path in the world." The nearby golf courses at Seaview, Northfield, Linwood, Somers Point and Brigantine are also experiencing a holiday rush of enthusiasts while the Boardwalk bicycle lane, open from 6 a.m. to 9 a.m., is getting more than its share of cyclists daily.

Atlantic City is particularly attractive for participation in these sports at this time of the year and boating enthusiasts still frequent these waters while the visiting fishermen continue to boast of their catches. For those who prefer sport of a less vigorous nature there is usually a bridge tournament underway at one of the beachfront or large side-avenue hotels.

* * *

Railroads Serve 25,000,000 Meals Annually in Dining Cars

Approximately 25,000,000 meals a year!

That is the number prepared and served on trains to appease the appetites of the traveling public, according to tabulations just made by the Association of American Railroads.

This is a sizeable job particularly in view of the fact these meals must be served from dining car kitchens approximately 6½ feet wide and 16 feet long, while speeding over the rails, in many cases, at better than a mile a minute. There is little, if any, opportunity for any part of these meals to be prepared other than in that small space.

Before a dining car leaves a terminal, the steward must stock his car to meet the demands of the epicure and the passenger of simple tastes. Once the run begins, there is not always an opportunity for him to replenish his stock of supplies. The steward must see that an ample store of all things which will be needed is on his car before the train departs.

From experience, however, the steward knows that of every hundred patrons about 85 will want coffee and 15, tea. About 35 will ask for roast beef while the remainder will order chicken, fish, chops and steaks in about the order named. There is one thing upon which the steward can gamble with assurance, and that is the fact that apple pie is still the greatest

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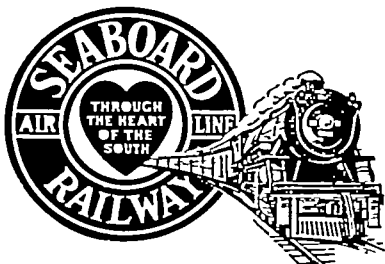
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teen thousand barrels of apples, 1,625,000 oranges, and a half million grapefruit go to make up the larger part of the railroads' \$750,000 annual fruit bill

Ice cream ranks high in the public's choice of desserts, with the result that approximately 450,000 quarts are used on an average in each year, enough to provide a cone for every child in the United States between the ages of five and seven

Efficient movement of the 1,500 dining cars now in service is an intricate task. On some long runs a diner will continue through from one terminal to another with the crew sleeping on the train. In other cases, dining cars are cut off from trains at certain points at night and restored to other trains in the early hours of the following morning so that breakfast will be ready to serve to the early risers. However, through years of experience, an efficient and dependable system of handling dining cars has been developed. There can be no slip-up in the arrangements by the commissary departments of the railroads. They know, and the passenger knows, that even though the dining car has been detached in the night, another one will be available the next morning and breakfast will be served as usual.

In addition to the regular dining car service, a number of railroads have installed lunch counter cars. Some railroads extend their dining car service direct to the passenger in his coach seat.

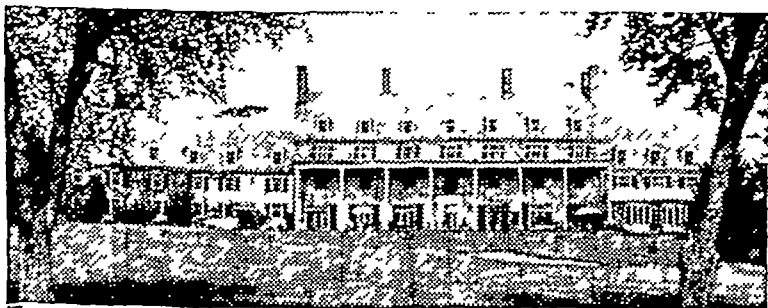
Before being employed in the dining car service, stewards, chefs and waiters are required to undergo a course of instruction at schools maintained for this purpose by the railroads. One large Eastern railroad, for instance, has three such schools where there are reproductions, both in space and equipment, of the latest dining cars. These schools are conducted under the observation of skilled instruction forces, thus enabling "on the spot" correction of any cooking or service deficiencies before the novice is assigned to regular duty.

* * *

Mrs F D Roosevelt Gets Australia's National Flowers

"To Mrs. Roosevelt, wife of the President of the United States of America, with the compliments of Mrs. J. A. Lyons, wife of the Prime Minister of the Australian Commonwealth," reads a card on two cases sent by way of Canadian Pacific express for New York.

The cases contain dozens of "waratah," the

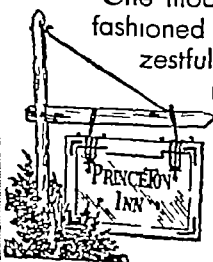


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Overlooking the Springdale Golf Club—Princeton, N. J.

The modern inn with a tang of real old-fashioned hospitality. Whether you come for zestful outdoor life—golf on the magnificent Springdale course adjoining, tennis, riding, or prefer quiet in this superb country, you will be well repaid for coming, if only to enjoy the perfect meals!

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American dessert, exceeding all others in demand.

The average equipment of each dining car consists of 800 pieces of china, 980 table cloths and napkins, about 240 pieces of glassware, 550 pieces of silver, and 200 pantry and kitchenware items such as pots, pans, knives, brushes, pails, and other utensils used by the chef and his assistants. Approximately 1,000 dishes of all kinds must be washed during a meal period by one man at a sink less than two feet square.

Some idea as to the immensity of this job of furnishing food to the hungry travelers can be gained by the fact that the dining rooms of the hotel reputed to be the largest in the world, average approximately one and a half million meals a year. One large eastern railroad alone serves nearly two and one-half million meals a year on its diners.

Installation of air-conditioned dining cars and train equipment, according to officers in charge of the dining car service, has resulted in an increase in the number of orders for heavier meals.

That the hungry public likes meat best of all is shown by the fact that more than 15,000,000 pounds of meat, costing approximately \$3,500,000 is consumed annually in railway dining cars contrasted with approximately \$155,000 for

meats in the largest hotel in the world. Mr and Mrs. Traveler also enjoy their coffee and tea, using annually approximately 1,000,000 pounds of coffee and about 250,000 pounds of tea.

Keeping the dining car service supplied with milk is an enormous job not only because of the quantity used but also because it must always be fresh. Dining cars attached to transcontinental trains must be supplied with fresh milk at various points en route. This means that milk must be waiting at the station when the train arrives, for a train cannot be delayed because the milk man has overslept or is otherwise late in arriving. Approximately 3,500,000 quarts of milk and cream are used annually in dining cars.

Eggs also play an important part in the diet of the traveling public. An average of 2,000,000 dozen eggs is used annually. The bread bill of the railroads also is a sizeable amount, an average of 1,125,000 loaves of bread and 30,000,000 rolls being served each year, upon which 2,000,000 pounds of butter are spread.

More than three thousand acres of farm land are required to grow the 9,000,000 pounds of potatoes which the dining car service of the railroads require each year. The other fresh vegetables, together with the berries and fruit that are used, would make a young mountain. Fif-

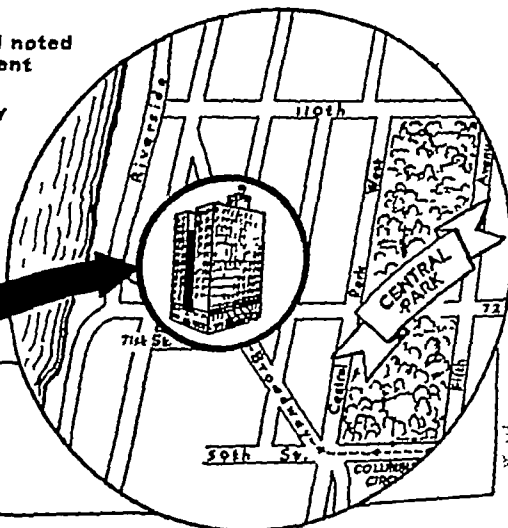
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diately consulted officials of the London and North Eastern Railway. He knew that some months before, that railroad had moved an entire farm, including house furnishings, wagons, agricultural implements and machinery, and livestock, a distance of 92 miles in a single day! It might be able, he thought, to solve even the Captain's problem, of how to live in Somerset County in a house that was in Suffolk County!

"Between the Captain, the builder, and the railroad, the old house was carefully demolished, and seventeen carloads of bricks and masonry, fruit trees, bins and outhouses, to say nothing of four large container cars of furniture, left Ipswich Station, on the London and North Eastern, for South Cheriton in Somerset. There Brooks Hall rose again, beam and brick by brick, a reincarnation in masonry, disappearing from Suffolk, coming to mellow life again, magically, in Somerset!"

* * *

Travel Brevities

DOCTORS registered recently at the St George Hotel in Bermuda included Dr J M Smith of New Jersey, Dr J H Craft of West Virginia, and Dr A. M Rose of New Jersey.

THE CASTLE HARBOUR in Bermuda reports the following guests in addition to those of the recent Post-Convention Cruise—Dr and Mrs W Chew of New York, Dr and Mrs M Grossman of Long Island, and Dr H Millman of New York.

AMONG THOSE PRESENT, guests at the Seaside Hotel in Atlantic City, were Dr and Mrs H E Gardner of New York, and Dr and Mrs W J Reilly of Connecticut.

REGISTERED at the Colton Manor, Atlantic City, Dr and Mrs F J Edgett were among

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Frozen solid in two blocks of ice, express men repacked the flowers for their transcontinental journey Miss Fleming left Vancouver on the same train for New York via Montreal

* * *

Georgian Mansion Crosses England

A British railroad recently played the good fairy, and whisked an entire Georgian mansion across England in a few hours, in what is said to be the most ambitious moving feat ever attempted, according to T R Dester of the Associated British Railways

"Captain Schreiber, retiring chief constable of Ipswich, in Suffolk County, loved Brooks Hall, his fine, old red-brick Georgian mansion at Ipswich, and had determined to spend his leisure years in it," Mr Dester explained. "But he loved Somerset County with equal intensity and could conceive of no other place so desirable for his years of retirement. And, fatally it seemed to him, the mansion and the county of his choice were separated by the whole breadth of England To bring them together seemed hopeless Such things didn't happen outside the pages of Sir Thomas Malory or Hans Christian Andersen

"But an enterprising builder, named West, heard of the Captain's quandary, and imme-



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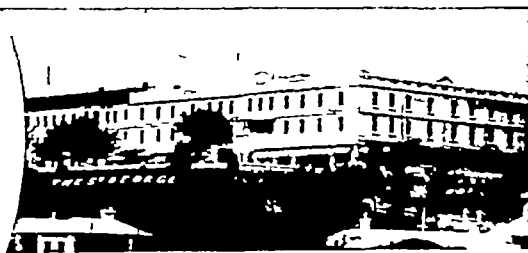
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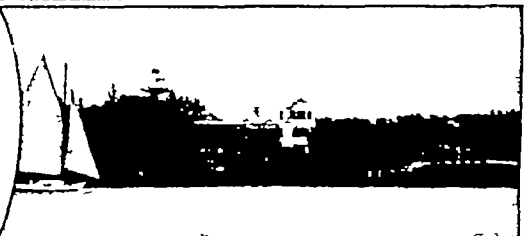
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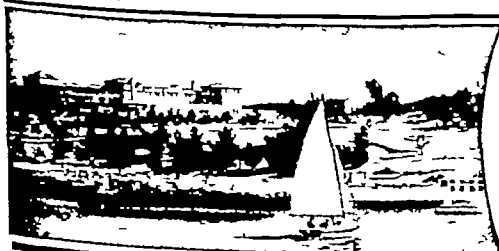
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several doctors and families enjoying the hospitality of this place.

A LONG LIST of physicians have been reported as registered at the Hotel Lexington in New York City during the month of October. Those from this state and vicinity included, Dr J A Lane, Dr R A Sauter, Dr Chas F Howland, Dr Walter J Riley, Dr J F Henggan, Dr R F Kreuger, Dr Edw Kivovits, Dr H L Bueno, Dr J L Golly, Dr Wm F Nealon, Dr J C Younie, Dr A M Crance, Dr John E Shay, Dr F R Daniels, Dr J Prescott Brown, Dr Mathew Shapiro, Dr A J Sullivan, Dr R L Strong, Dr H L MacCurdy, and many others from all parts of the United States.

THE SENATOR at Atlantic City had the following doctors registered: Dr and Mrs Harold J Isaacs, of New York, Dr and Mrs A Blank of New Jersey, Dr T Starch of New York, Dr B E Shettles of New York, Dr and Mrs M Cinader of New York, as well as many from other parts.

NEW YORK DOCTORS registered at the Book-Cadillac Hotel in Detroit recently included J H Frazer, Dr E. M Tracy, Dr Samuel J Stabins, Dr Frank Miller, Dr T S Blair, Dr Alfred Wyss, Dr Harvey L Daiell, Dr Daniel Kallan, Dr J B Condon, Dr W E Weiss, Dr D Roger Haggerty, Dr I Fresner, and many others from all parts of the country and world.

IMPORTANT archaeological discoveries have been made at Jarlshof, in the Shetlands, an island that is believed to have been a Scandinavian settlement before the Bronze Age. Many interesting objects have been unearthed, including some peculiarly shaped weights, a long narrow stone with a tree rune incised on it, a large knife-blade of iron, a pot cleek of bronze, fragments of crude vessels made of hard pottery, and small bronze sheets of scale formation. Articles older than the Bronze Age were found under a deep bed of sand.

These excavations have been carried out by the Ancient Monuments Commission. Investigations have also been made in Mousa Island by Dr Jan Petersen, director of the Museum at Stavanger, Norway.

Mousa is regarded as one of the best preserved Teutonic fastnesses in Europe. It has a circular site, about 50 feet in diameter, and is built of middle-sized schistose stones firmly cemented together. Dr Petersen's opinion of the discoveries at Jarlshof is that they point to a settlement resembling Viking dwellings in Norway.

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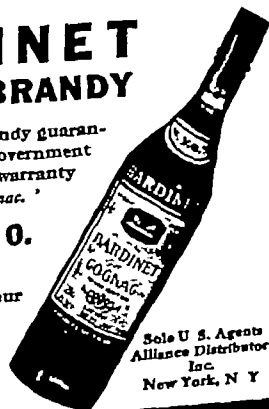
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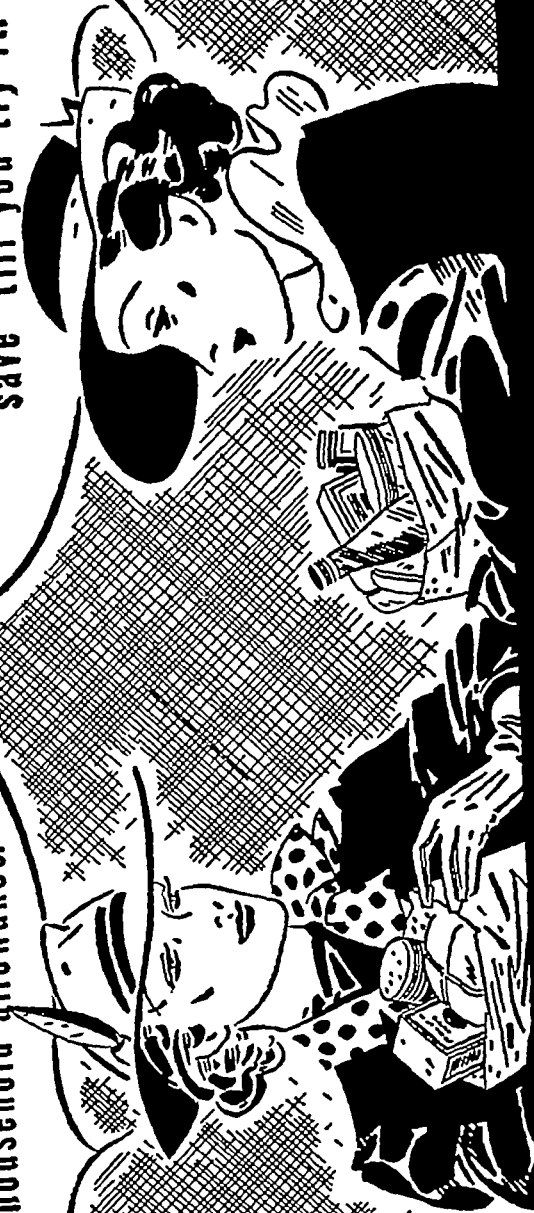
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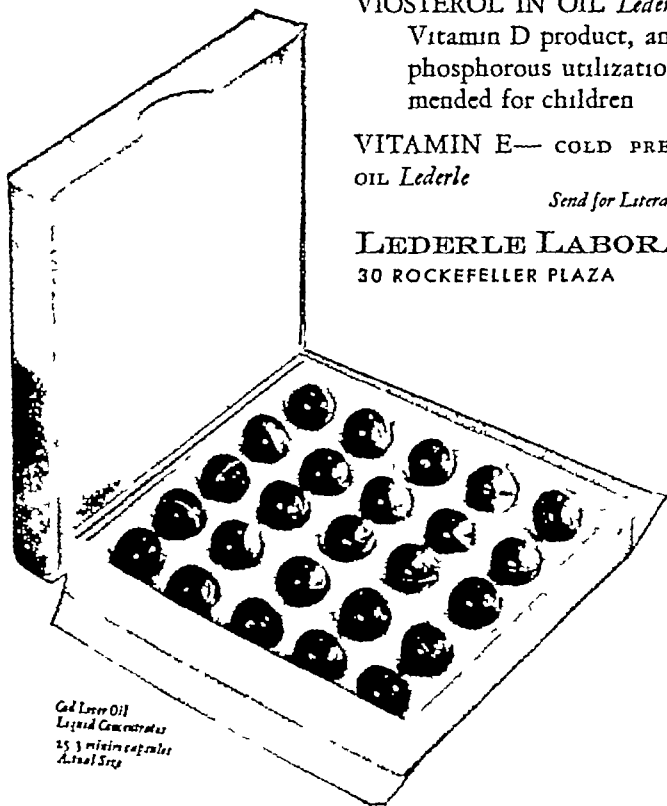
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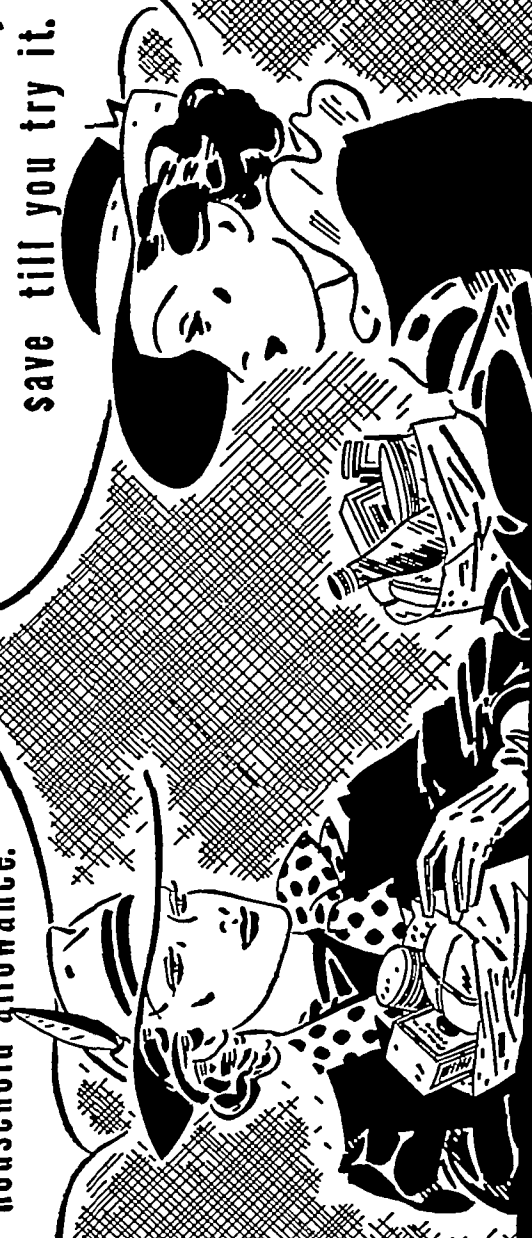
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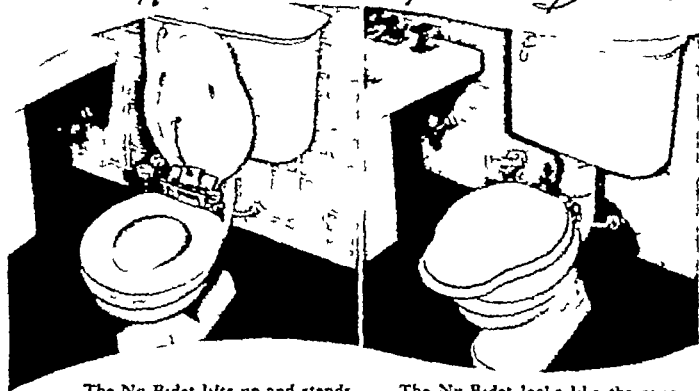
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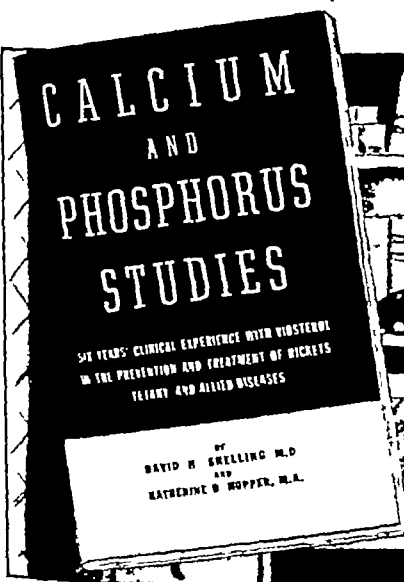
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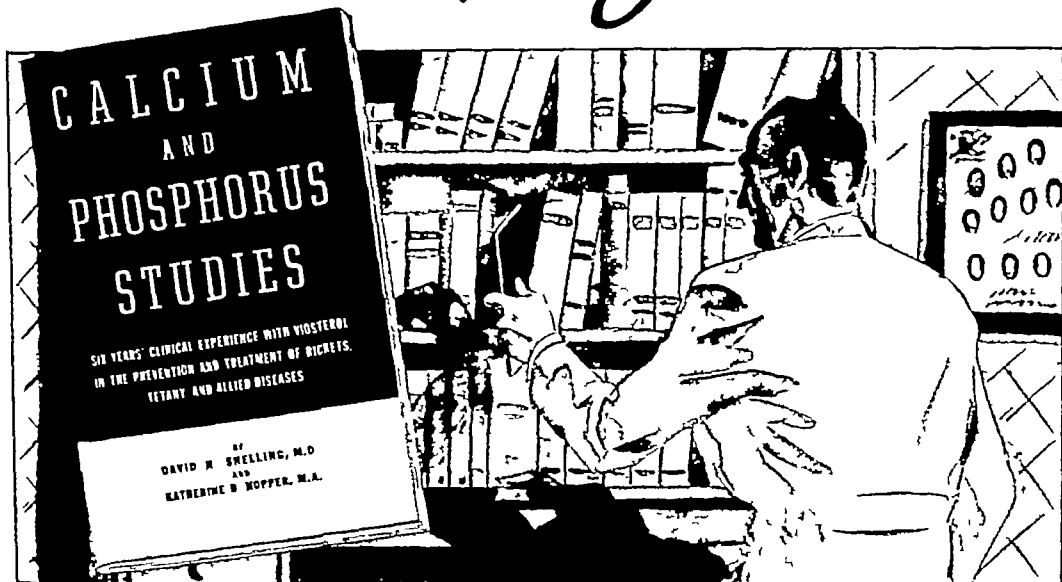
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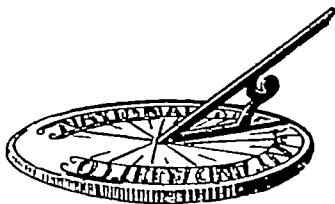


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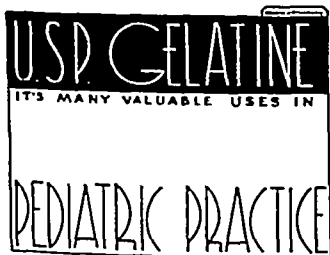
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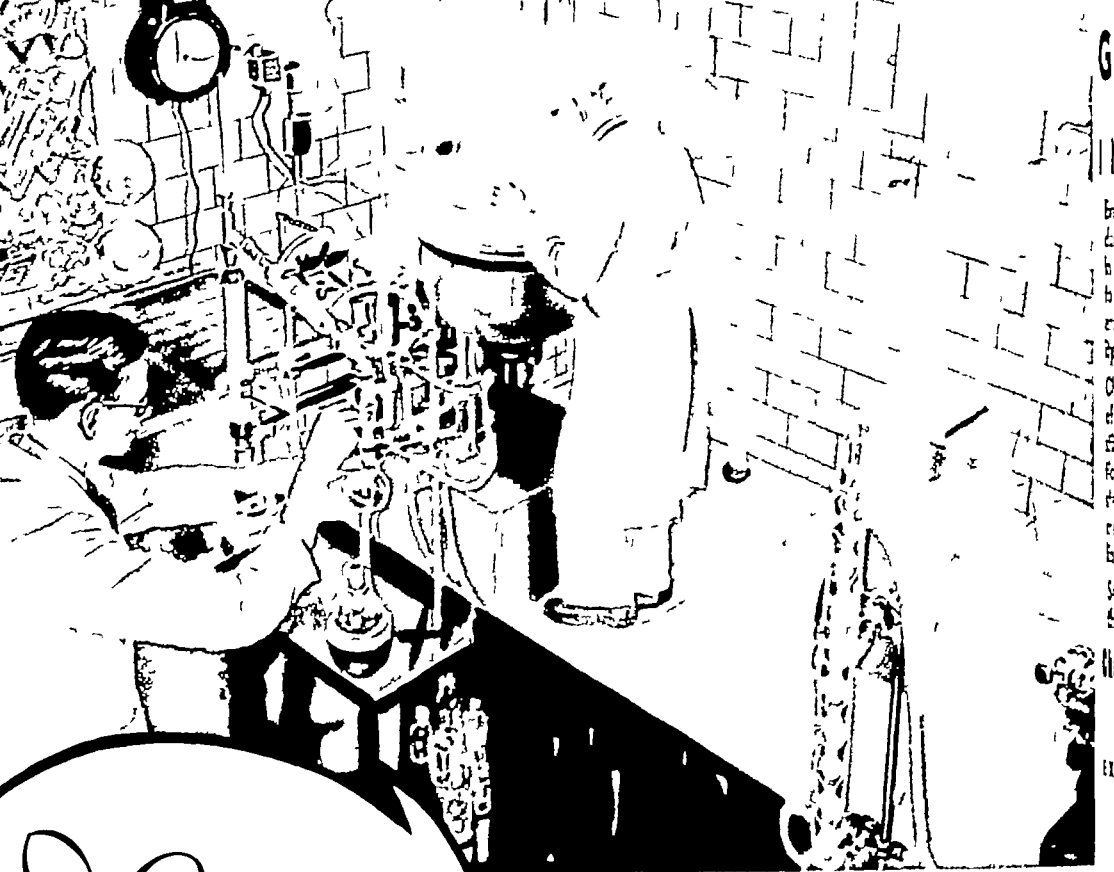


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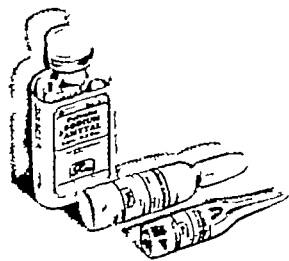
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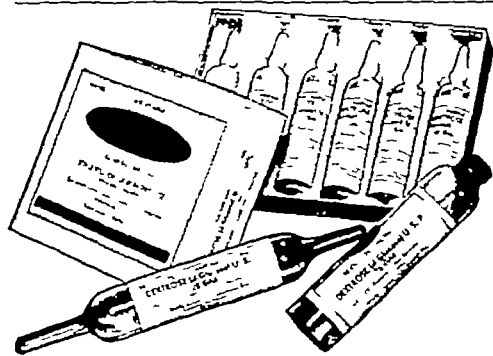
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EXCESSIVE ACID FORMATION	
<i>Acid</i>	<i>Disturbance</i>
Aceto acetic	Starvation
B hydroxybutyric	Cyclic vomiting
	Diabetes
	Ketogenic diet
	Asphyxia
Lactic	Intestinal intoxication
	Respiratory failure
	Shock
	Burns
DEFECTIVE ELIMINATION	
<i>Metabolite</i>	<i>Disease</i>
Phosphate	Nephritis
	Emphysema
Carbonic acid	Respiratory obstruction
	Myocardial failure
	Narcosis

CAUSES OF ALKALOSIS	
EXCESSIVE LOSS OF ACID	
	Hyperventilation
	Tetany
	Cerebral lesions (respiratory center)
	Hysteria
	Excessive crying
CO ₂	Vomiting
	Pyloric stenosis
	Intestinal obstruction
HC ₁	
EXCESSIVE INTAKE OF ALKALI	
NaHCO ₃	In Pyelitis
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HEAVY METALS	Arsenic, Lead, Mercury	None
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PNEUMONIA

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It is not necessary to emphasize to this audience the importance of pneumonia as a public health problem. At present we can only guess at morbidity rates. Even death rates from lobar pneumonia are very unreliable, since the distinction between lobar and bronchopneumonia is not sharply made. There is no doubt, however, that it is the most important cause of death among the acute infectious diseases. From this standpoint, meningitis, poliomyelitis, and the acute infectious diseases of childhood are insignificant. It even kills more persons than tuberculosis. Cancer and the chronic degenerative diseases, heart disease and nephritis, only, exceed it in lethal effects.

In 1904, alarmed at the seriousness of the death rate from acute respiratory diseases, the Board of Health of New York City appointed a committee of the most distinguished physicians and pathologists to carry on investigations concerning this subject. Their report contained valuable scientific information, but gave no information offering hope of a solution of the problem.

During the intervening years a large amount of work has been done bearing on the etiology and nature of the disease. The death rate, however, has not been markedly altered and the question now confronting us is whether all this increased knowledge offers no prospect of further reducing the ravages of this plague, or leaves us as helpless as we were over thirty years ago.

At that time stress was laid upon certain so-called predisposing factors in the

etiology of pneumonia, such as chilling or exposure to cold, fatigue, and overindulgence in alcohol, and efforts have been made to lessen the incidence of pneumonia by calling attention to these factors and advising that precautions be taken to guard against them.

These precautionary measures, if they were generally observed, might have some effect, but definite information regarding their importance is very meager, and it is almost axiomatic that for public health measures to be effectively enforced, they must have a sound scientific, not a purely theoretic, basis. It is frequently assumed that an important reason why pneumonia is more prevalent here than in certain European countries is that our houses are overheated and poorly ventilated. We have no actual evidence, however, that this is a fact, and without this evidence it is impossible to change long established customs.

An important fact that has emerged from the experience with pneumonia in more recent years, is that even lobar pneumonia is rarely a primary disease. The experience during the World War showed what an important part an infection like measles might play in increasing the incidence of pneumonia, for in many of the cases of pneumonia associated with or following measles the pathological changes in the lungs resembled those occurring in lobar pneumonia, and in a large proportion of the cases the bacterial infectious agent was pneumococcus. Also, during the great epidemic of influenza, while many of the cases of pneumonia oc-

curing at the time were found to be streptococcal in origin, in certain places, at least, cases of pneumonia of a lobar type and due to pneumococci occurred in large numbers. At least, during this period the incidence of true lobar pneumonia greatly increased. Moreover, it has become increasingly evident that most cases of lobar pneumonia give a history of preceding symptoms referable to the upper respiratory tract. A review of our histories shows this sequence of events in over sixty per cent of the cases, and the number would undoubtedly be much larger had this matter been carefully investigated in all instances.

It is very tempting to conclude from this that pneumonia may be considered to be a complication of preceding coryza or influenza, epidemic or sporadic. It must be borne in mind, however, that pneumonia chiefly prevails during the season when colds are also prevalent. Duell has found from careful studies that on an average every individual suffers from one to three colds annually. Nevertheless, it appears that a close association of some kind exists between the occurrence of coryza or more severe upper respiratory infections and the onset of lobar pneumonia, and it is probable that if methods were available for the prevention of these infections of the upper respiratory tract, the incidence of pneumonia would at the same time be decreased. Of much significance as regards the prevention of pneumonia, therefore, has been the recent presentation of evidence that common colds and influenza are specific infections caused by filterable viruses.

Dochez and his collaborators have demonstrated that following the transfer of nasal washings from persons suffering from colds to healthy individuals the latter may exhibit all the features of coryza. They have demonstrated that this occurs even though the washings be first passed through filters so fine as to hold back all bacteria. They have also shown that when the washings are added *in vitro* to certain media containing living cells, apparent multiplication of the infectious material occurs. The collection of the evidence so far obtained, however, has been extremely difficult since only man himself and anthropoid apes have

been found to be susceptible. Since there is apparently little immunity following an attack of the natural disease, the production of artificial immunity to this virus may be very difficult. Moreover, it is possible that there is not merely one cold virus but there may be many. But the important fact is that the ground has been broken, a start has been made.

So, too, an important advance has recently been made regarding the more serious upper respiratory disease—influenza. In the past it has been exceedingly difficult to define this clinical condition. During the great epidemics, such as that which prevailed in 1918-19, the cases diagnosed as influenza exhibited considerable uniformity. During the interepidemic periods, there occurs not only small localized outbreaks of a disease resembling the epidemic disease, but every physician every year sees a considerable number of isolated cases in which similar symptoms are present. However, in many of these cases the symptoms differ from those present in common colds only in their severity.

The study of the cases in the great epidemic brought no conclusive knowledge concerning the etiology. Three years ago Laidlaw and Andrewes, in England, during the study of certain patients suffering from conditions diagnosed as influenza, instilled nasal washings from these patients intranasally into ferrets, with the result that in these animals fever developed, not infrequently lesions in the lungs appeared, and in certain instances the animals died. The infection could be transmitted by bacteria-free material through a series of animals. In this country, also, Francis studied material obtained from small epidemics of so-called influenza in Puerto Rico and Alaska and from isolated cases in New York and Philadelphia, and was able similarly to produce a transmissible disease in ferrets. This infectious material could also be filtered, and later it was possible to transmit this filterable virus in cell-containing media and with the cultures reproduced the disease in animals. The evidence seems fairly conclusive, therefore, that influenza, at least that of the interepidemic periods, is also due to a filter-

The relation of this influenza virus to the cold virus is still uncertain, and it is not yet established that there is only one influenza virus, although apparently all the viruses obtained in 1934 by Francis from widely different sources are immunologically identical, and also the same as that obtained in England. Francis has also been able to develop methods for the artificial immunization of man against the 1934 virus. Through experiments carried out first on himself and then on volunteers, he found that the virus when injected subcutaneously was quite harmless. He therefore, in a group of men, made repeated subcutaneous injections of the culture virus, and when the blood of these individuals was studied later, it was found to have high protective power. So far as can be determined by this technic, therefore, it is possible to immunize man against this virus. How long this immunity lasts is impossible at present to say, and whether a method is available to prevent the occurrence of epidemic influenza and possibly of sporadic cases is too soon to predict.

But in any case, some progress has been made in understanding the acute upper respiratory infections that so often seem to be precursors of lobar pneumonia, and it is possible that the development and application of this knowledge may in the future be of great significance in the prevention of pneumonia.

But whether pneumonia is preceded by some other infection or not, the lung lesions and the severe symptoms are undoubtedly due to bacterial invasion. As is well-known, however, any one of a great number of bacteria may produce acute inflammation of the parenchyma of the lungs, which is what is really meant by pneumonia. This term, therefore, from the etiological point of view includes a great number of diseases. It is analogous to the term which a hundred years ago was used to describe all acute abdominal conditions, at that time typhoid fever, paratyphoid, appendicitis, peritonitis, and the various forms of dysentery were all designated "acute inflammation of the bowels."

The discovery of the methods of percussion and of auscultation and the invention of the stethoscope by Laennec led to a better knowledge of acute lung disease,

and the development of pathological anatomy was followed by the differentiation of cases of pneumonia on a purely anatomic basis into cases of bronchopneumonia and cases of lobar pneumonia, depending on whether entire lobes or only portions of the lung structure were involved.

While this was of some value from the clinical standpoint, as regards epidemiology or prevention or specific treatment, this kind of differentiation has been of little use. Indeed, these terms are very confusing, for with the tissues before him the pathologist is frequently unable to say whether the condition present in the lung should be called lobar or bronchopneumonia.

At the present time it seems much more useful to limit the term "lobar pneumonia" to cases associated with the presence of pneumococci, and for all the other cases of acute pneumonia—those due to streptococcus, staphylococcus, Friedlander's bacillus, etc.—to employ the term "atypical pneumonia." This is also not a good designation, but I know of no better one.

But, as you all know, even the cases of lobar pneumonia are not all due to a single etiologic agent. The types of pneumococci which have been described are now so numerous that only the specialist can keep track of them. But the discovery that pneumococci are not all alike but that there are a number of types, each differing from the others specifically in immunological character, has been of great significance, for it has cleared up many points regarding the epidemiology of the disease, which before were quite obscure, it has revealed possibilities for prevention, and it has made serum treatment possible in at least one group of cases.

Fortunately, so far as simplicity in prevention and treatment is concerned, the majority of cases of lobar pneumonia are due to pneumococci of two types, I and II. The relative frequency of occurrence of cases due to the different types undoubtedly differs somewhat in different places and at different times, but in general one may say that thirty-five to forty per cent of all cases of lobar pneumonia are due to Type I pneumococci and twenty-five to thirty per cent are due to Type II organisms, that is, sixty to seventy per cent

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course, only be surmised. The studies of Smillie indicate that the spread of the infectious agent to contacts is facilitated if the latter have colds.

Formerly it was believed that the occurrence of disease in an epidemic form was largely dependent upon an increase of virulence of the infectious agent. The careful investigation of epidemics artificially induced in laboratory animals by Topley in England and by Webster and others in this country have cast much doubt on this hypothesis. The data available at present seems to indicate, as Webster has stated, that the prevalence of disease in any population group "is controlled by fluctuation in the dosage of, and resistance to, specific agents of relatively fixed character." The experience so far obtained indicates that this statement probably also applies to Type I and Type II pneumonia. The indications are that the average person possesses fairly high resistance to infection with pneumococci and that it is only when the dosage is very high or when resistance is lowered that infection occurs.

Now if pneumococci of Types I and II are not widely distributed in nature, and if infection occurs chiefly through contact with persons ill of the disease, it is obvious that spread of the infection might be controlled by isolation of these patients. The mode of spread of infection in pneumonia due to pneumococci of the other types is not so clear, but as regards these two particular types the evidence now seems sufficiently convincing to justify careful isolation of the patients and thorough cleaning of rooms in which these patients have been treated.

Fifteen years ago we began to isolate all pneumonia patients admitted to the Hospital of the Rockefeller Institute, and the doctors and nurses and all persons coming in contact with them have been required to wear gowns and face masks. While the use of masks may not have great usefulness in preventing the spread of the infectious agent, those precautionary measures have had much educational value by laying stress on the fact that we are dealing with specific infectious diseases.

Smillie found that, although a very large proportion of individuals coming into contact with pneumonia patients in

the house became carriers of infection, few of the doctors or nurses or patients in adjoining beds in hospitals did so. He concluded from this that "it is quite justifiable to treat cases of lobar pneumonia due to Type I or Type II pneumococci in the open wards of our general hospitals." The contrast in the conditions found in the home and in the hospital may probably be explained by the fact that in most modern hospitals, through constant cleaning, removal of dust, etc., conditions exist which practically amount to partial isolation. Moreover, ordinarily colds and coryza, which facilitate spread of infection, do not prevail in general wards. However, Smillie himself describes an instance where one of the physicians became infected through close contact with a patient suffering from Type I pneumonia.

Just how important a result may be achieved by isolation of patients with pneumonia cannot be foretold, but it is probable that if isolation could be carried out in all cases, the incidence of Type I and Type II pneumonia could be markedly reduced. The conditions as regards Type I and Type II pneumonia are not greatly unlike those in typhoid fever. Although other more practical public health measures for preventing typhoid fever were later discovered, it was amply demonstrated in several communities that the prevalence of this disease could be very greatly diminished by isolation of the patients and destruction of the excreta.

What could be accomplished in the prevention of pneumonia by the method of artificial immunization is still questionable. As I have previously stated, man is probably relatively quite resistant to infection with pneumococci. The nature of his basic underlying resistance, however, is still obscure. This is not so strange, since it is not known why guinea pigs are very resistant, and mice and rabbits are extremely susceptible to pneumococcal infection.

Blake has presented some clinical and experimental evidence suggesting that in man the basic resistance to pneumococci is not type specific but species specific, and it is true that in most individuals type specific immune substances cannot be demonstrated in the blood. It is possible, indeed, that natural resistance is entirely

of all cases of lobar pneumonia are associated with pneumococci of these two types. The great public health problem, therefore, relates to the control of these cases.

For many years, the fact that pneumococci are frequently present in the mouths of healthy individuals as well as in the mouths of those suffering from pneumonia, caused doubts to be raised concerning the etiologic relation of these bacteria, and even after the pathogenicity of pneumococci was fully demonstrated, made the formulation of any conception of the epidemiology of pneumonia well-nigh impossible. Following the demonstration of type differences, however, it was found that pneumococci of Types I and II can rarely be isolated from the mouths of healthy individuals, and when they are present it is usually found that the individuals harboring them have lately been closely associated with persons suffering from pneumonia due to pneumococci of the same type. For instance, Webster, in a group of 105 healthy individuals from whom over 3,000 cultures were made over a long period of time, found Type I pneumococci in only a single individual, and then only once, and Type II organisms only on three occasions in two individuals. Similar observations have now been made by many others. On the other hand, when cultures are made from persons closely in contact with patients with pneumonia, organisms of the same type as those causing the disease are not infrequently present. Thus Smilie, in studying the house and family contacts of persons suffering from Type I or Type II pneumonia, found in the case of Type I contacts, organisms of the same type present in about one-fourth of the persons examined, and in the case of Type II contacts he found these organisms in over sixteen per cent of the contacts. It has been found, however, that pneumococci of these two types do not persist in the mouths of these healthy persons, but that in most cases they disappear within a short period of time. There may be chronic carriers of these organisms, but they are not numerous. Stillman was also able to cultivate from the dust and surroundings of pneumonia patients pneumococci of the same type as those causing the disease. The evidence, however, indi-

cates that these bacteria are not highly resistant to conditions present outside the body, though on one occasion Stillman found pneumococci of Type I in dust collected in the hallway of a tenement house in which forty days before there had been present a case of pneumonia of this type. Similar bacteria could not, however, be cultivated at this time from the dust of the patient's room, and it is possible that the presence of Type I pneumococci in the dust of the hallway was due to a chronic carrier living in the building. At any rate, most of the evidence indicates that pneumococci of these particular types are present chiefly in patients suffering from the disease, or in persons closely in contact with them, and in the immediate surroundings of these patients, and that these organisms do not persist for long periods of time except in the presence of disease. That these diseases may spread by contact infection from the ill to susceptible individuals has been shown by the fact that when two or more cases of pneumonia occur in members of the same family, as sometimes happens, all of the cases in most instances are due to pneumococci of the same type. Moreover, a limited number of small epidemics of lobar pneumonia in institutions or in small neighborhoods have now been investigated, and pneumococci of identical type have been demonstrated in all the cases.

An interesting epidemic of lobar pneumonia in a small village of three hundred inhabitants in Germany has recently been studied by Gundel. Within a period of a little over a month, ten per cent of the inhabitants became ill with Type I pneumonia. The studies showed that the epidemic started in a group of children who were closely associated in the school. By means of nose and throat cultures the spread of the infection could be traced. Finally one-third of the villagers became carriers of Type I pneumococci. It is probable that the rapid spread of the disease was due to the fact that the inhabitants of this isolated village had previously had little contact with this form of infection and were relatively highly susceptible. Milder forms of upper respiratory disease were also prevalent at the time. What influence this had on the occurrence of the pneumonia can, of

this might seem to be a matter to be discussed by physicians and to have no place in a public health program. However, public health authorities must become interested when therapeutic measures require the employment of technics and kinds of organization which are inaccessible to the practising physician. As you know, in New York State under the auspices of the State Medical Society, the State Board of Health, and certain private agencies, a campaign is now under way to improve the treatment of pneumonia by giving aid, instruction, and support to physicians employing serum treatment. Twenty years ago, following the demonstration that pneumococci are not all identical but that there are a number of distinct immunological types of pneumococci, and that animals suffering from pneumococcal infections could be cured by the administration of specific immune serum provided it was given early enough after the onset of the infection and provided it were administered in sufficiently large quantities, we began at the Hospital of the Rockefeller Institute to treat cases of Type I and Type II pneumonia, giving intravenously doses of immune serum that were then considered to be of extraordinary size. To give patients one hundred c.c. of horse serum intravenously was then thought to be dangerous, and by many was thought to be unjustifiable. However, in the light of the experimental evidence and in spite of much doubt and criticism on the part of many in the medical profession, we persisted. After a little experience it became evident that the results in Type I pneumonia were excellent, but in Type II pneumonia less encouraging. The employment of Type II serum was then discontinued. For the past twenty years practically all cases of Type I pneumonia admitted to the Hospital of the Rockefeller Institute have received large doses of immune horse serum. Fortunately the day seems to have passed when it was necessary to urge the value of this form of treatment. Most of the skeptics have become convinced, some of them in our opinion have even become somewhat overenthusiastic.

Although it seems probable that we now possess serum which is effective in certain of the less common types of pneumonia, and it is not impossible that in the future

modification may be found to improve Type II serum so that it may be useful at present the serum treatment of Type I cases is the only form of specific therapy in pneumonia that is on a well-established basis and the practical employment of which is now available to all physicians.

It is not sufficient, however, that patients be simply treated by the administration of Type I serum, of great importance is *how* they are treated. Before any treatment can be undertaken, the diagnosis of pneumonia must be made. Unfortunately, in the past most physicians have waited for the appearance of all the signs of consolidation before making a diagnosis. Patient after patient has been sent into our hospital with the statement that he has been suffering with severe symptoms for three, four, five, or even more days, but that the signs of pneumonia have just appeared. These patients have really had pneumonia for days, but it is quite true that the physical signs have not been definite.

The truth of the matter is that evidence of consolidation is not necessary for the diagnosis of pneumonia. To the experienced observer the symptoms of the onset of this disease are, in most cases, definite and unmistakable. In almost all cases the person who has a chill, fever over 102°, cough, pain in the side, rapid respirations, and, above all, who is expectorating sputum which is bloody, or even only slightly tinged with blood, has pneumonia. Even in persons who have suffered from cough or mild upper respiratory infections before the onset, the appearance of the more serious pulmonary infection is, in most instances, clearly indicated by the more or less sudden appearance of the symptoms I have mentioned. We physicians have made the diagnosis of pneumonia too difficult, and it is much less important that we make an occasional mistake, than that we live in fancied security for days until it is too late for effective specific treatment. Most cases "threatened with pneumonia" *have* pneumonia.

The determination of the etiologic agent in all cases of pneumonia involves difficulties, but methods are now available by means of which this can be done promptly in most instances. This is where the laboratory can be of help, and fortunately

unrelated to humeral immunity. But however this may be, we now know that even the most highly susceptible animals such as the rabbit may be rendered very highly resistant to infection with a particular type of pneumococcus by previously injecting into them killed cultures of the pneumococcus in question. Under these circumstances specific immune bodies appear in the blood.

In spite of all that has been learned concerning the artificial immunization of animals, it is somewhat disappointing that up to the present no successful use has been made of this knowledge in the prevention of pneumonia by the method of artificial immunization. One great difficulty in the way of progress in this field is the fact that owing to the endemic occurrence of this disease, and the more or less uniform distribution of cases in the population at large, the immunization of very large numbers of individuals and very careful collection of large statistical material would be required to determine whether or not the procedure were effective. Obviously, since ordinarily only three or four persons per thousand contract pneumonia, and only one or two die, judgment regarding the efficacy of the method will be difficult.

So far as I know there have only been two large scale attempts to solve this problem. During the World War, Cecil and Austin at Camp Upton vaccinated over 12,000 soldiers, leaving 19,000 unvaccinated as controls. The results, however, permitted no definite conclusions to be drawn, for while no cases of Types I, II, or III pneumonia occurred among the vaccinated troops and twenty cases developed among the unvaccinated, a very similar distribution of cases of streptococcus pneumonia occurred, 106 among the unvaccinated and only six among the vaccinated. It is difficult to understand how antipneumococcus vaccination prevented the occurrence of streptococcus pneumonia, and one cannot help drawing the conclusion that all the results were due to some other unknown factors. The experiment lasted, however, only a month and a half. It was hoped to observe the subjects over a long period, but owing to the exigencies of war this proved impossible.

The other large experiment has been

carried on over a number of years in the diamond mines in South Africa. During the period in which immunization has been employed, the incidence of pneumonia has markedly decreased, but during the same time improved hygienic conditions have been instituted and certain other factors have come into play so that it is impossible to say what part of the result, if any, has been due to the immunization.

Although the results so far have been inconclusive, the possibility remains that, if better methods were used, artificial immunization might be effective in reducing the incidence of this disease. Much has been learned during very recent years regarding the antigenic action of pneumococci and their products. The effects of autolysis and the action of ferments in rendering vaccines non-antigenic is now better understood. One of my associates has recently studied a commercial vaccine purchased in the open market and found it entirely inactive. Probably many of the vaccines previously employed have been lacking in antigenic properties. It has been shown that while in certain animals, as rabbits, the soluble specific carbohydrates have no antigenic action, in others, as mice, and in man, these substances act as true antigens. Following the intracutaneous injection of very small amounts of these substances in man, the blood acquires the property of precipitating the homologous specific substance, agglutinating the bacteria, and protecting mice against infection with pneumococci of the homologous type. If one may draw conclusions from analogous experiments in animals, these individuals have undoubtedly acquired increased resistance against infection. Moreover, it has been found that the immunity so induced may persist for a long period of time, at least two to three years. It seems, therefore, that further studies should be made of this and other methods of immunization and after the best method has been decided upon it should be tested on a large scale.

Although we now possess no well-established methods for reducing the incidence of pneumonia, there can be little doubt that the mortality from certain forms of pneumonia may be definitely decreased by specific treatment, provided this is carried out properly. At first sight

The greater ease of administration of the concentrated serum is obvious. In addition, most observers feel that the frequency of immediate reactions is less. This, however, is not certain. Anaphylactic reactions may occur with small amounts of serum as well as with large. Febrile reactions depend very much upon the care with which sera are prepared. Certain lots of unconcentrated sera give febrile reactions in a large proportion of cases, others rarely. In our experience, however, using both concentrated and unconcentrated serum from the same source, the febrile reactions with the concentrated serum have been notably less than with the whole serum. Probably the greatest value in using the concentrated serum consists in a decrease in frequency and severity of the symptoms of serum disease. These symptoms occur, however, with either the concentrated or unconcentrated serum, in at least half of the cases, seven to ten days following the administration of the serum. With present knowledge there is no way in which these unpleasant but harmless symptoms may be completely avoided. After all, in a very serious disease like Type I pneumonia, from which one patient in every four dies, a few days of itching and pain in the joints is not too high a price to pay for restoration to health. In our clinic 462 cases of Type I pneumonia have now been treated with immune serum. We have judged its value in these cases by the apparent effect on the symptoms, the fact that following its administration bacteria disappear from the blood and on the mortality rate in the patients treated.

Since, during the same period the mortality rate in cases of pneumonia not due to Type I pneumococci has remained at about the same level as that in other hospitals, it seems that the low rate in the Type I cases is definitely due to the serum treatment. In our last twenty-eight cases treated with concentrated serum, not a single patient has died, and one cannot but believe that our constantly improving results are due to the splendid serum now being prepared under the direction of Dr Wadsworth of the laboratories of the State Department of Health.

The complaint is sometimes made that after all, serum treatment is possible in

only a part of the cases of pneumonia, and attempts are made to treat all cases of pneumonia either with Type I sera or with so-called polyvalent sera. Type I pneumonia, however, in this country probably causes 25,000 deaths every year, almost twice as many as were ever due to typhoid, except in certain epidemic years. Type I pneumonia should be looked upon as a specific infectious disease, as specific as is typhoid fever, and be treated as such.

From our experience, therefore, Type I serum should be given as early as possible and in large amounts, and the doses should be repeated every four or five hours until definite effects are seen in the fall of temperature, decrease in pulse and respiratory rates, and improvement in the other signs of intoxication. If the infection is not severe, one or two doses may be sufficient, but there is no way of judging the severity of the infection at the outset, and it is useless to "feel one's way" and begin the treatment with very small doses. It is better to give too much than too little. Skin tests with soluble specific substance, as proposed by Francis, are useful in determining when sufficient serum has been given, but the observer must have had considerable experience in order to rely on this method alone. Much stress has been laid upon the possible dangers of violent reactions. There are some risks, but we now know how to guard against them. That we did not have disastrous results when we first began using very large amounts of serum intravenously, when we did not know the dangers or how to guard against them, shows that the dangers are not too great. By making preliminary tests for serum sensitiveness, by proceeding very slowly in the first injections, and by prompt use of adrenalin in case any symptoms occur, the possibilities of serious complications are almost entirely avoided.

In conclusion, one may say that, although we are still far from the final solution of the pneumonia problem, definite advances have been made and knowledge concerning the diseases of the respiratory tract have been so greatly increased during recent years that we can begin to venture the hope that means will be found to reduce the mortality from these diseases, just as the mortality from

in this state branch and approved laboratories of the State Board of Health are now so located that practically every physician can very quickly have sputum examined and obtain information regarding the type of infection present. But the physician and nurse must take pains to obtain good specimens of sputum and personally see that they are sent to the laboratory at once. By the so-called Neufeld method, all that is necessary is to treat the sputum with rabbit immune sera of the various types. If, for instance, the organisms are of Type I, swelling of the capsules occurs in the Type I serum and in sera of no other types.

In certain cases it is not quite so simple as this, but if the laboratory takes adequate pains, a diagnosis can be made promptly in almost all cases. The laboratory should consider the examination of pneumonia sputum an emergency measure. It should not be delayed until the next morning or until other work is out of the way, and the physician should be notified by telephone or telegram as soon as the diagnosis is made.

As soon as it is determined that the patient is suffering from Type I pneumonia, serum should be administered. There should be no waiting to see whether the patient will not be better in the morning, it should not be delayed because he does not seem sick enough to justify giving serum, or it should not be decided that "it is too late, he is too far gone for serum to be of any use."

The only exceptions we have made in administering serum have been in an inconsiderable number of children who were not very ill, since most children with lobar pneumonia recover, *second* in patients who were moribund on admission and died before serum could be administered, and *third* in patients who were obviously in the stage of recovery on admission.

All other cases have been treated as soon as the diagnosis was made. This is of importance because some of those employing serum have recommended that it be used only in cases that can be treated as early as the third or possibly the fourth day. It is true that the effectiveness of the serum is apparently greater the earlier in the disease it is used, but our experience indicates that no patient, however late he is seen, should be deprived of the

benefits of this measure. In our series, the mortality rate in cases treated during the first three days was 48 per cent, in those treated on the fourth day or earlier, 82 per cent, on the fifth day or earlier, 86 per cent, and in those treated after the fifth day, 195 per cent.

Until two years ago, whole serum in doses of one hundred c.c. was administered, during the past two years concentrated serum has been used. As early as 1915, Avery determined which fraction of the serum contained the immune principles, and demonstrated how concentration of the serum might be accomplished. We delayed employing concentrated serum, however, for many years, even after improved methods for concentrating the serum were devised by Felton and others, for the following reasons. In the first place, concentration adds materially to the expense of an already very expensive procedure, since in all methods of concentration a large loss of immune substances inevitably occurs. Concentrated serum contains nothing which the unconcentrated does not contain. In the second place, in our opinion the methods first employed for standardization of the concentrated serum gave entirely misleading information regarding its actual strength. With the methods first proposed, it was claimed that a concentration of twenty or more times that of the original serum had been obtained and doses of five c.c. of the concentrated serum were considered adequate. Our own observations and experience taught that this was impossible. Specific treatment in this serious disease is not one for a teaspoonful three times a day before meals.

Several years ago, when the New York State Board of Health was able to supply serum concentrated from good effective serum, and not from weak serum which would otherwise be useless, and when we could be sure that it was standardized by a satisfactory method, we began using this, not in doses of a few cubic centimeters, but in fifteen to thirty c.c. doses. That is, it has been possible to concentrate the serum three to five times. Using the determination of strength employed by the New York State Board of Health, we have used doses of 90,000 units present in amounts of fifteen to thirty c.c. of concentrated serum.

SURGICAL TREATMENT OF PERIPHERAL VASCULAR DISEASE

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Let there be but one opinion and you have an end of research and knowledge—*Aschoff*

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Illinois Research and Educational and St Luke's Hospitals*

The success of the surgical therapy of peripheral vascular disease rests on a number of factors. Accurate diagnosis, a thorough trial of conservative management, the careful selection of the stage of the disease in which operation is undertaken, adequate postoperative treatment, and a sober evaluation of late results will bring about a crystallization of indications. It must seem obvious that the surgeon undertaking the operative treatment of peripheral vascular disease must be fully familiar with all other aspects of a peripheral circulatory disturbance or be closely associated with men interested in cardiovascular disease. Unless the natural course of the disease with its exacerbations, remissions, and periods of latency are known, a faulty evaluation of the results is apt to follow.

In this comparatively new field, a group of uncritical enthusiasts and hypercritical nihilists are arguing the merits of their pet projects and peeves. In addition, a host of gadgets, mechanical rocking chairs, oscillating beds, cradles, thermostats, vacuums, and exsiccators have appeared on the market. Small wonder that in this maze of enthusiasm and denunciation the general practitioner may readily become confused. Symposiums such as this should serve the definite purpose of summarizing advances made and outlining trends of thought.

It would be tempting to review here all the surgical procedures advocated for the treatment of peripheral circulatory disturbances, but Dr George Scupham and I have done this elsewhere.¹ Because of the limited time I will restrict this discussion to the procedures with which I have had personal experience and which have stood the test of time. These surgical procedures may conveniently be discussed under three headings, namely (1) surgical efforts to improve circulation,

(2) surgical efforts to alleviate pain, and (3) surgical methods to remove nonviable parts at the optimal time and at the optimal level.

Surgical Attempts to Improve Circulation

Embolectomy The conclusions reached from a survey of the literature and an analysis of twenty-nine cases of sudden arterial thrombosis and ten cases of acute arterial embolism are as follows:²

1 An attempt should be made to differentiate between embolism and thrombosis of the peripheral arteries, keeping also in mind the possibility of traumatic vessel spasm and venous or lymphatic block with secondary vessel spasm.

2 One must try to localize the site of occlusion and determine on the basis of the patient's age, cardiovascular status, and the known incidence of gangrene from occlusion at that site, whether or not a gangrene is to be expected.

3 It is necessary to utilize vigorous conservative measures, including heat, papaverine, and negative pressure if available, with the purpose of overcoming the spasm of collateral vessels which always accompanies sudden arterial occlusions.

4 Should these measures fail and equipment be available, an embolectomy is indicated, especially if the patient is seen within the first ten hours.

5 If all these measures fail and gangrene is present, amputation is indicated at the level of adequate circulation if there is a chance to save the patient's life.

Of the ten cases that I have diagnosed as arterial embolism, five have been explored. The other five either arrived too late or responded to conservative measures. Only two cases out of the five survived, both being cases of embolism of the iliac arteries. I am convinced that if these patients had been treated early with methods producing vasodilatation and brought to the surgeon in less

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 29, 1936*

acute intestinal infections has been diminished. The close relation between the milder acute diseases of the upper respiratory tract and the more serious lung infections makes one believe that the most important step will consist in the prevention of colds and influenza. The important new knowledge that has been gained regarding these conditions marks a long step forward toward that goal.

Something in the way of preventing pneumonia can be accomplished by isolation of pneumonia patients and preventing the distribution of the more specific micro-organisms, Types I and II, from patients infected with these bacteria. Physicians should feel the responsibility of warning patients and friends of the danger of spreading the disease and of the importance of wearing masks and gowns and of thorough cleaning of rooms previously occupied by pneumonia patients.

Methods of immunization deserve thorough study, and after a decision has been reached regarding the procedure which offers the greatest promise,

it is hoped that it may be tried on a larger scale and over a sufficiently long period to obtain definite and conclusive results.

At the present time, a real impression can be made on the mortality rate by the general and proper use of immune serum in the treatment of Type I pneumonia. The State Board of Health is ready to assist in this matter and it now remains for physicians to make full use of this therapeutic procedure.

Consolidation of efforts by the medical profession and the health authorities offers great promise of usefulness, not only in this but in other fields. After all, the object of both groups is to diminish disease and delay death. That the members of one group should have their attention chiefly directed toward the individual and those of the other group toward society as a whole should give rise to no conflicts. The coordination of their activities should greatly increase the effectiveness of both groups. Instead of thinking of prevention or cure, we must all be interested in prevention and cure.

730 PARK AVE.

A TAKE OFF ON ALLERGY TREATMENT

A keen sense of humor can make almost anything comic, and an anonymous writer takes a crack in the *Atlantic* at the varied treatments for all the assorted kinds of allergy. His fictional characters are "Mrs Werfel" and "Dr Wattle," and the skit is neatly condensed by the Editor of the *Virginia Medical Monthly* thus:

"Expectantly," so runs the account, this allergist "produced his tray of concentrated poisons, two hundred vials containing such deadly extracts as those of the soybean, the dill pickle, kohlrabi, nutmeg, and canary feathers. Expectantly, with his tiny flat instrument, he coerced one hundred varying substances into each of Mrs Werfel's arms. At the end of the two hours which the operation consumed, her arms bloomed like the rose, but with hives."

Cheerfully Mrs Werfel was told "that she was intolerant to barley, oats, wheat, buckwheat, casaba, rice, cocoa, coffee, tea, tobacco, artichoke (French), artichoke (Jerusalem), asparagus, the navy bean, beet, broccoli, Brussels sprouts, not to mention chives, corn, cottonseed, cucumber, dandelion, parsley, parsnips, peas, pimiento, potato, pumpkin, as well as garlic, ginger, hops, malt, mustard, nutmeg, paprika, peppers, psyllium seed, sage, senna—as time went on she dozed, missing the fruit, the fish, the nut, the fabric, the feathers, the powder, the bacillus classes," and cheerfully she was instructed to confine her diet to "butter, heavy

cream, goat milk, Parmesan cheese, egg white, duck egg, goose egg, gelatin, pork, rabbit, fig, lemon, butterfish, butternut."

When jaundice reduced this diet to the starvation proportions of gelatin and butternut, Dr Wattle came to the rescue with "a really miraculous serum," which he assured her would make future dieting completely unnecessary, if she would be patient, for it naturally took time for the system to be "properly stabilized."

For three years he juggled the dosage for "extreme stimulation or extreme depression followed if the amount administered was too large or too small," and "the physician could only judge from the patient's reports," and when Mrs Werfel was ready to jump off a bridge, Dr Wattle was ready to save her with "the perfect diet, the diet that does away with all serums, the fat-free diet."

"But," said the now completely bewildered Mrs Werfel, "I thought butter and cream, according to the skin tests,

"Skin tests," observed Dr Wattle, "served their purpose for a time, but we have since discovered them to be misleading. The fat-free diet, on the other hand, is universal. Moreover, you must remember, that there is a certain type of allergy."

Then the *Virginia* editor, "at the risk of being considered utterly devoid of humor," argues at some length that "this is not the true picture of allergy in the hands of the true allergist."

and in which reflex dilation to heat produces only a slow and incomplete rise in temperature, the results are moderate but still worthwhile. The hand may become cold and arterial spasms may return but the progress of the disease is arrested and the attacks are less frequent. All patients in this group feel that they have benefited from the operation but the result is not as dramatic as in the first group.

In the third stage, patients have advanced structural disease of the arteries. The fingers will fail to heat up when heat is applied to the lower extremities. They suffer from a diffuse sclerosis of the digits involving skin, joints, tendons, a sclerodactyly secondary to an advanced Raynaud's disease. In such patients the late results are poor and a year or two after the operation the condition of the hands is no better than before. While in the first two groups the operation has been of great benefit, in the third stage it is useless.

In poliomyelitis with vessel spasm, the type of patient who will be benefited by lumbar sympathectomy has been described by Harris as follows⁶:

In a child, preferably not older than eight years, if the paralysis is limited to one extremity and is moderate in degree, a sympathetic ganglionectomy will maintain an increased vascularity of the extremity and can result in accelerated growth of the shortened limb.

Scupham and I are studying three children who have been picked from Dr. Ryerson's material out of a group of twenty-five. Our experience has been favorable in that the cold, painful, plum-colored extremities have now gone through two winters with marked increase in vascularity. We have been unable to show, however, that an increased growth takes place in the paralyzed limb, possibly because the children were between ten and sixteen years of age. If the limb is hopelessly paralyzed, the normal stimulus of muscular contraction and weight bearing will be lacking and not much growth can be expected.

Reflex dystrophy, acute bone atrophy, stump neuroma, and causalgia are fundamentally identical with vasomotor and trophic disturbances which occur after mild soft tissue injuries, infections, venous thromboses, and fractures⁷. This syndrome is characterized by shiny, swollen fingers or toes, marked stiffness because of contraction of the joint capsules and

tendon sheaths, a spotty atrophy of bone, and marked sensitivity to heat and cold. Paroxysms of pain may be evoked by fright, unexpected noises or any emotional state. Conservative measures, such as heat, massage, diathermy fail in the severe cases. Psychotherapy is often needed because these patients are mostly of the neurotic type and have a low intelligence quotient. Almost specific relief may be obtained in the otherwise intractable cases, some of which have come to amputation, by sympathectomy. If a local source of irritation such as a perineuritis around the median or sciatic nerve, a periphlebitis or a stump neuroma cannot be found and removed, the reflex can be interrupted on the efferent arc by a sympathectomy. In five such intractable cases I have obtained excellent results.

Buerger's disease The diagnosis of Buerger's disease is not easy, even more difficult is it to predict its natural course. It is obvious that sympathectomy will not influence the progressive vascular inflammation, especially if it is widespread throughout the entire vascular system. Nevertheless, the fact remains that the lesion is predominantly in the blood vessels of the extremities. The acute stage characterized by a migrating phlebitis and arteritis is a definite contraindication to sympathectomy. These patients need rest, continuous heat, adequate fluids and salts. In a late stage where the reserve capacity of the vascular bed has been exhausted, when reflex heat or a block of sympathetic fibers shows little rise in the temperature of the digits, sympathectomy will be of no avail. There remains then a small group of cases—five per cent of my present material—in which there is no sign of any acute inflammation and in which tests can demonstrate the capacity of the vascular bed to dilate. In such patients sympathetic ganglionectomy has been of decided benefit. At present our indications for performing sympathectomy in Buerger's disease may be summarized as follows: (1) In patients with involvement of the fingers, with loss of phalanges, continuous pain, a cervicothoracic sympathectomy is advised. (2) On the lower extremity, if coronary or other visceral involvement is not demonstrable,

than ten hours, our results would have been vastly improved. The idea of utmost emergency in cases of acute arterial occlusion has somehow not reached or appealed to the medical profession. In this field we are still living in the pre-Murphy days of appendicitis. Peripheral arterial occlusion is still accepted as the inevitable forerunner of gangrene and amputation. Yet out of 296 embolectomies collected by Pearse, forty per cent operated on in the first ten hours were successful. The point that should be especially emphasized is that a vigorous treatment of the collateral vessel spasm, which is best accomplished by a combination of large heat cradles and intravenous injections or papaverine, may make an embolectomy unnecessary, but even these conservative measures fail unless promptly applied, preferably within ten hours following the arterial occlusion.

Sympathetic ganglionectomy. A sympathetic denervation of an extremity, done to improve impaired nutrition of the affected part, brings about the following changes in circulation: for the first five to eight days there is a flushing of the skin, increased pulsation of vessels, increased elimination of heat, and a rise in surface temperature. In a second stage, which usually begins in the second, occasionally in the third week, the skin becomes pale, the visible capillaries are contracted but show a rapid flow, and the pulsations return to the preoperative level. The fact that the vessels regain their *tonus* and that the fingers do not maintain the initial increase in pulsation³ has led some workers to believe that sympathectomy produces no lasting effect on circulation. This challenge has been made with such dogmatic assurance that it seems worthwhile to examine the evidence for increased circulation following sympathectomy. It is on this basis that the unquestionable clinical improvement in cases to be discussed later can be explained.

In the animal, the rate of blood flow per minute is approximately the double in the sympathectomized extremity. In man, measurements of blood flow have been made with indirect methods and show a permanently increased and fixed blood flow in the sympathectomized limb. Dr. Hick and I have found that satura-

tion of the venous oxygen rises after sympathectomy and remains elevated for at least several months after the operation.⁴ The increased oxygenation of tissues is what one tries to accomplish and not the increased pulse volume to which some seem to attach so much significance.

It is customary to remove the inferior cervical, first and second thoracic sympathetic ganglia to denervate the upper extremity. This can be done by an anterior low cervical or a posterior paravertebral approach. While technical details have no place here, I am more and more in favor of the anterior approach which is more difficult but allows for a more thorough identification of the structures to be removed. The convalescence of the patient is much more rapid. There are three possible approaches for the removal of the second, third, and fourth lumbar ganglia which is done for the sympathetic denervation of the lower extremity. Of these, with certain exceptions, the two-stage, anterolateral extraperitoneal approach is my choice, while the transperitoneal approach has been used less often in my clinic.

For both cervicothoracic and lumbar sympathectomies, local anesthesia with adequate premedication can be used successfully. In uncooperative or highly nervous individuals, the addition of a light gas anesthetic is advisable. The positive pressure apparatus is always in readiness in case the pleura should be punctured.

The types of vascular disturbances in which I have performed sympathectomies are as follows: Raynaud's disease, polyomyelitis with vessel spasm, reflex dystrophies, and Buerger's disease. The results require an individual analysis of these groups.

Assuming that the diagnosis of Raynaud's disease is correct, the results will differ according to the stage of the disease in which the operation is undertaken.⁵

In the first stage, there are no detectable structural changes in the arteries or in the soft tissues of the digits. The vessels dilate fully when relaxation is obtained by heating parts of the body. The late results are excellent in this group.

In a second stage in which there is ulceration of the finger tips or painful stellate scars at the end of slightly tapering digits,

and in which reflex dilation to heat produces only a slow and incomplete rise in temperature, the results are moderate but still worthwhile. The hand may become cold and arterial spasms may return but the progress of the disease is arrested and the attacks are less frequent. All patients in this group feel that they have benefited from the operation but the result is not as dramatic as in the first group.

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if there is no spreading infection and marked arteriolar destruction, a bilateral lumbar sympathectomy is advocated. It is explained to both groups of patients that unless they maintain a complete abstinence from tobacco, unless foci of infection are eradicated, unless they continue with conservative measures, recurrences or further progress of the disease may be expected. The advantages of an operation in Buerger's disease are as follows. In the well-selected case, there is a striking improvement in the nutritional state of the extremities. Ulcers heal and the edema subsides, indicating that it is not necessarily due to venous obstruction. Should a sudden thrombosis of a larger vessel occur later, collateral vessel spasm will not be at play and the incidence of gangrene is diminished.

section is entirely postganglionic with a resulting degeneration of sympathetic fibers and sensitization to circulating vasoconstrictor hormones. In order to do an operation comparable to one on the lower extremity, one might leave the stellate ganglion intact, divide the white rami of the second and third thoracic nerves, and divide the sympathetic trunk below the third thoracic ganglion. At the suggestion of Telford⁹ I have performed this operation in two cases and the immediate results were excellent. It remains to be seen whether the late results will be better than with cervicothoracic ganglionectomy* (Table I).

Surgical Attempts to Alleviate Pain

In this group of cases, the structural disease of the arteries has passed beyond

TABLE I.—LATE RESULTS OF SYMPATHECTOMY IN PERIPHERAL VASCULAR DISEASE

Diagnosis	Stage of disease	Success	Improvement	Failure	Mortality
Raynaud's disease	First stage	3	0	0	0
	Second stage	6	2	0	0
	Third stage	0	0	2	0
Poliomyelitis	Unilateral, moderate paralysis	3	0	0	0
Reflex dystrophy	Severe, intractable	2	0	0	1
Buerger's disease	No acute process, no diffuse arteriolar involvement	6	3	0	1
Totals		20	5	2	1

An analysis of the causes of failure following sympathectomies for peripheral vascular disease reveals the following factors:

1. Improper stage of the disease (sclerodermic stage of Raynaud's, active inflammation or diffuse arteriolar involvement of Buerger's disease).

2. Technical failure in that incomplete number of ganglia are removed. This can be tested by the persistence of sweating in the denervated limbs.

3. Regeneration of sympathetic fibers which occurs when only ramisection is done and is again manifested by the return of sweating in previously dry areas.

There is one further possibility for the return of symptoms which is encountered on the upper extremity, and that is the sensitization of the denervated vessels to adrenalin and to thermic stimuli. This possibility was stressed by James White and his coworkers.⁸ Lumbar sympathectomy is a preganglionic section for the majority of the fibers going to the lower extremity with the exception of those fibers which join the femoral and obturator nerves. On the upper extremity, the

point where an appreciable reserve capacity exists. Furthermore the usual analgesics and sedatives have been of no avail or had to be steadily increased. The list of these operations is as follows:

Peripheral nerve block. The injection of alcohol, section and resuture or crushing of the peripheral nerves supplying the foot can be accomplished with short exposures five to six inches above the ankle. At this level no motor fibers are injured except those going to the small intrinsic muscles of the foot. Their paralysis is unnoticed by the patient. With three incisions, preferably done a few days apart, the entire foot can be desensitized. To ensure healing by first intention, incisions must be made only if the reactive hyperemia to histamine is adequate. This method has been of great service to patients suffering from the painful, ulcerated or gangrenous toes of Buerger's disease. Should minor amputations become necessary, they can be done without further anesthesia.

* A total of fourteen preganglionic thoracic sympathectomies have now been performed. The results are superior to those obtained by cervicothoracic sympathectomy and have persisted for over six months.

Healing of ulcers is facilitated by the sympathetic paralysis which may produce a marked rise in temperature. In arteriosclerotics and diabetics, I have been somewhat reluctant to do these nerve blocks unless collateral circulation is adequate at the level of the incisions. The anesthesia lasts three to four months, freedom from pain longer. In two patients the procedure was repeated at six month intervals. In one patient the circulation of the foot had improved to an extent that a lumbar sympathectomy could be carried out later.

This is a very efficient procedure and has no drawbacks if care is taken for very careful protection of the foot after desensitization.

Paravertebral nerve block This method imitates the effect of sympathetic ganglionectomy. However, in agreement with others it has been our experience that injection of the cervicothoracic chain is often followed by severe neuralgias and pleurisy. The lumbar sympathetic chain is at least two cm. in front of the lumbar nerves and is separated from them by the psoas muscle. Nevertheless, in two patients of a total of ten, a psoas weakness and painful paresthesias resulted from the injection of ninety-five per cent alcohol to the second, third, and fourth lumbar ganglia. The use of this method is limited to elderly arteriosclerotics with continuous rest-pain extending over the whole lower extremity. With accurate technic, the method is useful, relieves rest-pain but not intermittent claudication. For a temporary increase in circulation, paravertebral block may be made with novocain to relieve collateral vessel spasm in case of a sudden arterial obstruction or following the ligation of a large artery.

Methods to Remove Nonviable Parts

Amputation for intractable pain alone is hardly ever indicated since the advent of newer methods which I have just discussed. Amputation of a hopelessly paralyzed part is an occasional consideration. By far the most important indication for amputation is to remove a part which is hopelessly lost or which endangers the life of the patient because of absorption of toxins or spreading infection. In any large group of amputations, peripheral vascular disease still figures as the cause in about thirty per cent.¹⁰ The incidence of amputation in cases of Buerger's disease is definitely decreasing with earlier diagnosis and adequate treatment, but even Silbert's series shows that the fail-

ure to avert major amputation occurred in nine per cent of his cases. In a survey previously made, I had to amputate ten patients out of a hundred cases of Buerger's disease.¹¹ Minor amputations, loss of digits occur in a much larger percentage of cases. Arterial thrombosis and embolism require a certain number of amputations, but the greatest percentage of amputations is performed in patients with arteriosclerotic and diabetic gangrene. The latter have an additional tendency to gangrenous infection and septicemia.

It is outside the scope of this discussion to describe the technic of amputation. But the optimal time and the optimal level of amputation deserve some emphasis. The growing tendency for conservatism in the treatment of peripheral vascular disease is obvious. But this must not lead to unnecessary delay in facing inevitable amputations. So long as the gangrenous area is dry, there is no sign of ascending lymphangitis or phlebitis, no rise in temperature, and no chills, a trial with continuous heat, suction treatment, and waiting for spontaneous demarcation is permissible. But when the patient begins to look toxic—and it must be remembered that diabetic patients can have a positive blood culture without a rise in temperature—amputation should be urged and not be performed too late as a hopeless gesture. Under a low spinal anesthesia, my mortality of thirty-five amputations for gangrene was about twenty-two per cent but of course the mortality within one year is around fifty per cent, and in two years or more only one-third of the diabetic patients are alive and a third of these had bilateral amputations.¹²

Some confusion exists in regard to the proper level of amputation. In my experience, the cutaneous histamine reaction and the skin temperature are the two most helpful methods for the determination of the level of circulatory efficiency. One still sees surgeons picking off toenails or removing phalanges when amputation above the knee is necessary.

The surgeon should take further interest in the rehabilitation of the amputated patient. He should apply, if prompt healing has taken place, a temporary peg-leg within three weeks and not leave the rest of the work to limb manufacturers.

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Regarding efforts to alleviate pain, the choice of proper treatment depends upon the status and prognosis of the individual case. The clinical leeway for regression or progression of local pathology in peripheral vascular disease is often so slight that clinical astuteness gained from previous observations and combined with experience of prognosis is required to neither over or under treat these patients. All treatments should be of a mild degree. Multiple mild treatments are more efficacious than single severe ones. Machine treatments are dangerous. Patients in any machine should be carefully and persistently observed. It is dangerous therapy to adapt a patient with

pathology to a set machine. The machine should either be adaptable to the individual patient or else it should not be used.

In the absence of infection, palliative treatments such as rest, sedative, whirlpool baths, massage, elevation and depression exercises, environmental temperature not over 93°F, alcohol in small doses, pedecures, protection of pressure points, general nursing care, and a condition of mental rest will often be effective.

In the presence of infection in toes particularly in thromboangitis obliterans, arteriosclerosis with and without diabetes mellitus, if palliative treatments as mentioned, along with appropriate surgical dressings do not relieve pain, I do not hesitate to employ peripheral nerve block of the deep and superficial peroneal, posterior tibial, sural, and internal saphenous nerves by exposure under local or general anesthesia and crushing of the nerves for varying distances with a small hemostat depending upon the time I desire the anesthesia to last. Relief of pain, accompanied by anesthesia of the part, permits more intensive local surgical treatment, release from sedatives, a marked improvement in the patient's appetite and weight, and more normal and physiology of their vascular, nervous, digestive, and genitourinary systems.

I have blocked 141 peripheral nerves in the lower extremities of forty-six cases of obliterative arterial disease in the past five years, by either alcohol injection, alcohol injection and crushing, division and suture, or crushing. Pain was completely relieved in ninety-seven per cent of the thromboangitis obliterans group and ninety per cent of the arteriosclerotic group, eighty-one per cent of the arteriosclerotic with diabetes group were relieved of seventy-five to one hundred per cent of their pain. Some degree of pain persists in the anesthetic areas of a few of the nerve block cases. The explanation of this result in a few cases has been difficult. Most instances are probably due to abnormal branching and distribution of branches of the nerve above the block site. I now prefer to block nerves by crushing with a small hemostat. A single crushing over three-four mm will give anesthesia of the part supplied by the nerve for about six months, a second adjacent crush will add three to four months more of anesthesia, and a third, three to four months more, or a total of twelve to fourteen months. Return of sensation is heralded by a paresthesia which may be slightly uncomfortable.

Nerve block is a simple anatomical operation of great clinical value for relief of pain

in these patients. It should not be attempted until the operator is familiar with the nerve anatomy, as unnecessary extensive dissection in tissues of diminished blood supply may precipitate further local ulceration or gangrene. The greatest technical difficulty is encountered when nerves are not in their usual anatomical situation or present abnormal branches with unusual distribution.

Regarding methods to remove nonviable parts, I published (*Archives of Surgery*, August 1933) a technic of an amputation through the leg in cases of gangrene of an extremity from thromboangitis obliterans, diabetes mellitus with and without diabetes, and in over fifty cases so treated I have only reamputated one case because of extension of gangrene in the stump. If an amputation is properly done in these cases, it should not be necessary to perform it through the thigh unless the local acute pathology has ascended into the middle third of the leg. The pulsation of the popliteal artery is not always a true criterion for the type of healing one may obtain in an amputation stump of the leg. I think the day has come to evaluate amputation results. I am convinced that routine thigh amputations because of foot or toe pathology are too radical, unnecessary, and unwarranted, and should be stopped. Besides extensive acute pathology, the only other indication for a thigh amputation in these cases is chronic pathology in or about the knee joint which would prevent the use of a prosthesis suited to a stump below the knee.

As regards embolectomy, I have had no experience with papaverine hydrochloride. I shall try it the next time I see such a case. Results in both early and late cases at Presbyterian hospital have been bad. The mortality is high and the number of postembolectomy thromboses with subsequent gangrene is also high. The associated cardiac condition in our cases has been particularly bad and multiple successive embolic phenomena have been the rule. In early selected cases in the extremity, I shall continue attempted operative removal after evaluation of the patients local and general condition and if possible, use a unilateral spinal anesthesia.

I have used the pressure suction machine in four cases of embolus of the lower extremity vessels. Two could not tolerate the machine because of increased pain. Three continued to gangrene necessitating amputation and the fourth was subsequently amputated because of fibrosis and contracture of the calf muscles leaving him with a cold blue painful useless extremity in spite of the fact that it was completely healed.

In the cases of Raynaud's disease, my re-

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2 Cases of hay fever, which become free clinical manifestations as a result of desensitization treatment, have as high even a higher titer of P-K antibodies in their serum as was present before hypodermization and while the patients were suffering from clinical manifestations. Many cases of infantile eczema have a high titer P-K antibodies to egg-white, but, in some of these cases, egg-white desensitization produces no clinical manifestations. The same holds true with other antigens and inhalants in atopic dermatitis of

which exposures regularly produce clinical manifestations, without, however, producing clinical manifestations of clinical hypersensitivity except in the rarest instances. Desensitization, for example, produces clinical manifestations in the majority of infants, despite the presence of these antibodies in the host is, as a rule, free of clinical manifestations.

Observations surely demonstrate that the presence of antibodies has not been sufficient to prevent all doubt. Nevertheless, most observers that hay fever is due, in all probability, to an antibody reaction. Multiple, has shown that when antigens are injected into the nostrils or membranes of the nose and when this procedure is followed by exposure to allergen, the clinical manifestations of hay fever are not observed. This is a mass of further clinical evidence which shows that P-K antibodies are responsible for the clinical manifestations of hay fever and in some cases, provided always that there is no known concomitant hypersensitivity (presence of

specific sensitization), and in almost all cases except perhaps in the case of serum sickness, where the hypersensitivity is responsible and antibodies are the most tenuous of factors. The possibility of the development of cell-fixed antibodies can have no

classical observation of the occurrence of antibodies in the blood from an

bearing upon the present question of classification or upon the present exact definition of the term "allergy."

It seems to me, therefore, that the demand for the antigen-antibody reaction in the definition of allergy is today untenable, as it would still have to exclude almost every accepted specifically altered state in human beings and many such states in animals.

Some authors avoid this obviously insurmountable difficulty by hypothesizing the presence of antibodies (cell-fixed tissue antibodies) in those specifically altered states in which no antibodies have, as yet, been demonstrated. I, too, believe in the possible presence of such antibodies, but I hold that the hypothesis as to their presence cannot be made the criterion (or limit) of a scientific definition. It must be clear and unanswerable that, if the hypothesizing of the responsibility of antibodies is admissible in any one state of specifically altered reactivity, such an hypothesizing must be equally admissible in any other such state. In other words, the postulation of hypothetical antibodies cannot, in any way, contribute to the clarification or definition of the concept of allergy. As long as one admits that the antibodies need be only hypothetical, allergy reverts to the original definition embracing all specifically altered states.

Another suggestion for modification of the original definition of allergy consists of *confining the term to specifically acquired hypersensitivity*. This would exclude the phenomena of specifically acquired *hyposensitivity* and specifically acquired *immunity*. These exclusions are so obviously contrary to the fundamental principles involved that only a few words are necessary to illustrate the impossibility of confining the concept "allergy" to the phenomenon of specifically acquired *hypersensitivity*.

The very reason for the formulation of the concept "allergy" was the close connection and interdependence of the phenomena of acquired hypersensitivity and hyposensitivity. The same preparatory exposures may lead to one or the other, and often to the concomitant appearance of both. In fact, it is the rule to find certain phenomena of hypersensitivity coupled and associated with

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ALLERGIC MANIFESTATIONS IN DERMATOLOGY

MARION B SULZBERGER, M D, *New York City*

You have just heard an excellent and detailed discussion of the role of allergy in certain skin eruptions due to fungi, foods, drugs, and occupational hazards*.

I do not feel called upon, nor would it be possible for me, here to add any important specific and pertinent details to the already comprehensive remarks of the previous speakers. I feel rather that the subject assigned to me clearly shows that I am intended to pass from the specific to the general, and that I should attempt to present the reasons for unifying so many dissimilar and apparently unrelated dermatoses under the one concept of allergy.

You have indeed heard comprehensive discussions of the role of allergy in four different types of skin diseases.

But these four, although important representatives, are only selected examples chosen from among the many dermatologic manifestations in which allergic alterations are of proven fundamental and outstanding significance. For the mere mention of only a few more such conditions dominated by allergy—syphilis, tuberculosis, leprosy, vaccinia, malleus, serum sickness, and atopic dermatitis (neurodermatitis)—the mere visualization of these different clinical pictures will suffice to show how diverse and apparently unrelated the manifestations of allergy may be.

It is therefore the object of this contribution to show that allergy plays a significant part in diverse dermatologic manifestations. Since the previous speakers have so adequately discussed the details of the specific basic experiments and observations, it becomes my task to demonstrate that these phenomena fall within the confines of allergy in general, according to its present interpretation and meaning.

There has undoubtedly been consid-

* This was the fifth and final paper in a Symposium on "Allergy in Dermatology."

erable discussion, not to say controversy, about the meaning and the limits of the word "allergy," and a great deal of confusion has thus ensued. I believe that this is largely because of the great diversity in the manifestations of allergy, and because of the continually increasing number of manifestations to which the concept of allergy can, in my opinion, rightfully be applied.

I am not unaware that many criticize the application of the term allergy to such a multitude of various phenomena. These critics seem to believe that a concept applied so widely must thereby lose in precision, and thus in value.

It does not necessarily follow, however, that a wide concept need be vague. For, even though a concept be wide, the necessary degree of precision can be maintained as long as a sharp definition be accepted and preserved. As v Pirquet (1906) foresaw when he coined the word "allergy," the very wideness of this concept has proven to be perhaps its most valuable property. For the application of the broad concept of allergy has enabled investigators of many different diseases to study their diverse manifestations from a common, instructive, and thus eminently profitable viewpoint.

Many observers warn against the dangers inherent in the rapid increase in the number of manifestations now being attributed to allergy. These dangers are surely real and apparent, and, in my opinion, they can be obviated only by the general acceptance of a precise definition of the term "allergy." I therefore feel that it is not amiss once again to quote the original definition of v Pirquet,¹ as well as some of his explanatory remarks. v Pirquet says, as follows:

We are in need of a new, general, non-prejudicial word to designate the altered condition which an organism achieves after acquaintance (Bekanntschaft) with any organic, living, or inanimate poison.

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 28, 1936*

sults have been both good and bad. Resection of the first and second dorsal sympathetic ganglia give temporary results. Additional resection of the inferior cervical ganglion added the deformity of a Horner's syndrome but gave more permanent relief of vasomotor spasm, permitted ulcers on distal closed spaces to heal, and relieved pain. The results at two years in the group has only been about fifty per cent. Vaso-spastic phenomenon have returned in minor to major degrees. In those cases with advanced sclerodactylic changes the return to their preoperative status has been most marked. They are hypersensitive to adrenalin as noted by White and Smithwick of Boston as attested by their surface temperature drop when given 1000 c.c. of adrenalin (1:250,000) intravenously. Further attempted relief in this adrenalin sensitive group is in abeyance for the time being. I plan to precede with subsequent Raynaud's cases as advocated by Smithwick—namely division of the dorsal chain below the third ganglion—implantation of the proximal end into the erector spinal muscle group to prevent regeneration and evulsion of the pre-ganglionic fibers by removing the second and third intercostal nerves medial to the sympathetic chain up to the spinal foramina. The follow-up results in the cases so treated have not been of sufficient duration to be

stated at this time. The immediate post-operative clinical results are good.

Lumbar ganglionectomy has been more permanently efficacious than the dorsal operation. The use of this procedure in other than true Raynaud's for vascular disease should be instituted with considerable judgment and thought. It remains a procedure of surgical magnitude. Preoperative novocain block tests are indicated before all sympathetic ganglion operations. Particular care in the dorsal region should be taken not to enter the pleura, lung or spinal canal with the injection fluid. I prefer to study finger temperature changes by blocking with an infiltration novocain procedure the median nerve at the wrist and the ulnar at the posterior elbow region, and for the toes the posterior tibial nerve below the internal malleolus as advocated by Scott and Morton. Both of these procedures are harmless when carried out aseptically.

Recent advances in the treatment of vascular extremity diseases have assumed such proportion as to justify the institution of a special clinic for such case treatments in hospitals. In the past five years in a limited Peripheral Vascular clinic at Vanderbilt clinic we have not had to do a single amputation for gangrene in some 400 cases cared for which came to us without gangrene. To my mind this fact justifies the efforts expended in this clinic.

THE BETTER KIND OF CHICAGO GRAFTERS

Engaging possibilities loom as we read in a scientific journal of the successful transplantation of the leg of one animal to another animal of the same species. The Sunday supplement writers are no doubt already busy with pen and pencil foretelling what wonders this will mean for mankind, so no effort will be made here to rival their flights of genius.

Writing in *Science*, journal of the American Association for the Advancement of Science, J. V. Schwind of the Loyola University School of Medicine, Chicago, describes an operation in which he succeeded in grafting a leg of an albino rat upon the body of another rat in such a way that the transplanted limb retained its muscular activity. He used methods similar to those of plastic surgery whereby skin is taken from one part of the body and placed upon another part.

Referring to Dr. Alexis Carrel's experiment in 1907, when a leg was transplanted on a dog, Mr. Schwind said that in that case, although the new leg healed normally,

"no regeneration of nerves or return of functions of the muscles were reported."

"In the experiments reported here," he went on, "successful transplantation of entire legs was accomplished and, in addition, re-establishment of considerable muscular control of the new leg was obtained."

He explained that in making the experiment the two animals were joined together at first, so that the transplanted leg continued to receive enough circulation from the body of the first animal to maintain its life as transplanted. When tests showed that the transplanted leg had made its new circulatory connections with the body of the second animal, the leg was completely amputated from its original owner.

"After several weeks," he went on, "slight motion was apparent in the new leg, which was massaged and exercised daily. There was a gradual increase in the muscular response until the leg was able to lift a ten-gram weight over one centimeter."

2 Cases of hay fever, which become free of clinical manifestations as a result of hyposensitization treatment, have as high or even a higher titer of P-K antibodies in their serum as was present before hyposensitization and while the patients were still suffering from clinical manifestations

3 Many cases of infantile eczema have high titer P-K. antibodies to egg-white, and yet, in some of these cases, egg-white ingestion produces no clinical manifestations. The same holds true with other foods and inhalants in atopic dermatitis of adults

4 Certain exposures regularly produce P-K. antibodies, without, however, producing manifestations of clinical hypersensitivity, except in the rarest instances. *Ascaris* infestation, for example, produces P-K. antibodies in the majority of instances. But, despite the presence of these antibodies, the host is, as a rule, free of clinical manifestations

These observations surely demonstrate that the role of antibodies has not been proven beyond all doubt. Nevertheless, I agree with most observers that hay fever and asthma are due, in all probability, to an antigen-antibody reaction. M. Walzer, for example, has shown that when P-K. antibodies are injected into the normal mucous membranes of the nose and conjunctivae, and when this procedure is followed by exposure to allergen, the clinical manifestations of hay fever are reproduced. There is a mass of further experimental and clinical evidence which supports the opinion that P-K antibodies are actually responsible for the clinical sensitivity in hay fever and in many cases of asthma,* provided always that certain as yet unknown concomitant factors are present as well (presence of shock-tissue, etc.)

But in all the other specific sensitizations I have mentioned, and in almost all human sensitizations except perhaps asthma, hay-fever and serum sickness, the role of responsible antibodies is the sheerest and most tenuous hypothesis. They have not been demonstrated to date, and the possibility of the ultimate demonstration of cell-fixed antibodies in these conditions can have no

* For example, the original classic observation of M. Ramirez demonstrating the occurrence of asthma in a previously normal individual after receiving a transfusion of blood from an asthma patient.

bearing upon the present question of classification or upon the present exact definition of the term "allergy"

It seems to me, therefore, that the demand for the antigen-antibody reaction in the definition of allergy is today untenable, as it would still have to exclude almost every accepted specifically altered state in human beings and many such states in animals

Some authors avoid this obviously insurmountable difficulty by hypothecating the presence of antibodies (cell-fixed tissue antibodies) in those specifically altered states in which no antibodies have, as yet, been demonstrated. I, too, believe in the possible presence of such antibodies, but I hold that the hypothesis as to their presence cannot be made the criterion (or limit) of a scientific definition. It must be clear and unanswerable that, if the hypothecation of the responsibility of antibodies is admissible in any one state of specifically altered reactivity, such an hypothecation must be equally admissible in any other such state. In other words, the postulation of hypothetical antibodies cannot, in any way, contribute to the clarification or definition of the concept of allergy. As long as one admits that the antibodies need be only hypothetical, allergy reverts to the original definition embracing all specifically altered states.

Another suggestion for modification of the original definition of allergy consists of *confining the term to specifically acquired hypersensitivity*. This would exclude the phenomena of specifically acquired *hyposensitivity* and specifically acquired *immunity*. These exclusions are so obviously contrary to the fundamental principles involved that only a few words are necessary to illustrate the impossibility of confining the concept "allergy" to the phenomenon of specifically acquired *hypersensitivity*.

The very reason for the formulation of the concept "allergy" was the close connection and interdependence of the phenomena of acquired hypersensitivity and hyposensitivity. The same preparatory exposures may lead to one or the other, and often to the concomitant appearance of both. In fact, it is the rule to find certain phenomena of hypersensitivity coupled and associated with

The vaccinated individual reacts differently to the lymph, the luetic to the syphilis virus, the tuberculous [person] to tuberculin, and the one injected with serum reacts differently to the serum, than does an individual who has never yet come into contact with the given agent. He is, nevertheless, as yet far from being immune because of this. All we can say about him is that his capacity to react has been altered (Reaktionsfähigkeit geändert ist)

I suggest the word "allergy" to designate this general concept of *altered reactivity*. "Allos" designates an aberrance from the original state (Verfassung), from the behavior of the normal, as in allorhythmia, allotropism.

The vaccinated [person], the tuberculous [individual], he who has been injected with serum—all become *allergic* to the respective foreign substance. Furthermore, a foreign substance which, after one or more contacts, influences an organism to alteration of reaction, is an *allergen*. The expression is derived—indeed in a non-philological manner—from the designation "antigen" (Detre-Deutsch), which means a substance capable of producing antibodies. The concept "allergen" goes farther: the allergens include, in addition to the antigens, numerous protein substances which do not produce antibodies, but do cause hypersensitivity. All agents of those infectious diseases which are followed by immunity are allergens. Also to be considered as allergens are the poisons of mosquitoes and of bees, insofar as manifestations of hypo- and hypersensitivity follow contact with these agents. For this same reason, we must also include as *allergens* the pollen of hay fever (Wolff-Eisner), those substances in strawberries and in crabs which bring about urticarial reactions, and probably also a whole series of organic substances which produce idiosyncratic reactions.

I know that there are many who say that the pronouncements of v Pirquet need no longer be accepted as gospel, in spite of the fact that he was the originator of the word "allergy." I freely admit that it is not necessary in medicine to adhere blindly to definitions once they have become outworn and outgrown. However, when such an old, accepted definition is to be altered or amended, it is imperative that the suggested modifications be clearly defined. And it seems to me not only that v Pirquet's definition is still the one which is most tenable and precise, but that none of the critics have

advanced a new or a clearer definition which satisfactorily describes and adequately embraces the recognized phenomena of human and animal allergy.

For these reasons, the attempts to alter v Pirquet's adequate, precise, and established definition have been futile, and have brought about unnecessary confusion.

I should like to discuss a few of the most commonly suggested modifications of v Pirquet's definition, and thus of the concept of allergy.

There are some, for example, who would *postulate the demonstration of responsible antibodies* to justify the application of the term "allergy." Quite aside from the fact that this is in direct contradiction to the original and long-accepted definition, this postulation of an antigen-antibody reaction at present automatically excludes from allergy almost all the well-known specific sensitizations in human beings. For, with present methods, no antibodies can be demonstrated to be the causes of the specifically altered states in such conditions as tuberculosis, syphilis, mycotic affections, smallpox, drug sensitizations, contact eczema, many food idiosyncrasies, and in a greater number of other pathologic states which are recognized as being the very prototypes of allergic reaction. In other words, the demand for the proven responsibility of antibodies would exclude from allergy the phenomena of tuberculin, luetin, and trichophytn allergy, the allergy of revaccination, drug sensitizations and desensitizations, and the sensitizations of eczematous type including even those which have often been deliberately produced with plant products and simple chemicals.

Even in hay fever and in asthma, there is no proof absolute that the specific Prausnitz-Kustner antibodies so frequently encountered are the actual causes of the clinical sensitivity. For, if antibodies are responsible in these conditions, it is still difficult to explain the following observations:

1 There are many typical cases of asthma in which no antibodies can be demonstrated, in fact, in asthma due to hypersensitivity to drugs (aspirin, etc.), no antibodies have been found.

thus phenomenon, etc. It must be clear, therefore, that while all these are undeniably distinct and different forms of hypersensitivity, they all have in common a basis of a specifically altered capacity to react, due to previous exposure, and made manifest by subsequent exposure to the same or to a closely related substance.

I hope that my remarks may have in some measure served to explain why such divergent manifestations as those found in hypersensitivity to foods, in drug eruptions, in fungus diseases of the skin, and in occupational dermatoses have all been included under the common heading of allergic skin diseases.

In order to include them under this heading, it is necessary to show only that their manifestations, however divergent, are dependent, to a greater or lesser degree, upon a specifically acquired altered capacity to react. I do not doubt that the detailed expositions of the previous speakers have made clear the various proofs (1) of the existence of specifically altered states in the skin diseases discussed and (2) of the profound influence the specifically altered capacity to react exerts upon the course and manifestations of these skin diseases.

It is surely unnecessary for me to recapitulate these proofs or to submit any further evidence in the way of concrete citations from the literature. I may state, however, that, in a like manner and step by step, through years of painstaking research, allergy has been shown to be an essential factor in the course of many skin conditions not mentioned in this symposium. The clear demonstration of the role of allergy in tuberculoderms and syphiloderms, in leprosy and lymphopathia venerea, in serum sickness and in atopic dermatitis (neurodermatitis disseminata), and in other skin conditions too numerous to mention—in all these diseases, allergy has been demonstrated and its role proven by experiments and observations essentially and fundamentally the same as in the particular dermatoses which have been the chosen subjects of this symposium.

The nature of my remarks makes it imperative for me to warn emphatically

against certain possible misinterpretations. The possibility exists that some may conclude that, because all these varying manifestations are to be considered allergic, they must also at the same time be considered identical with, or closely similar to one another. This is, of course, far from being the case. In fact, I feel that it is of the utmost necessity to realize that, for the present at least, these different manifestations of allergy are not to be identified with one another, except as regards their belonging under the one broadest classification of phenomena due to a specifically acquired capacity to react. The altered capacity to react, as found in asthma, hay fever, and urticarial skin responses, surely appears to be entirely different from the altered state in eczematous contact dermatitis. For example, the altered capacity to react in tuberculum hypersensitivity and in tuberculoderms is apparently entirely different from that in fixed drug eruptions, and it is equally obvious that all these allergic states are not only seemingly different from one another, but also from the allergy as seen in the specifically acquired hypersensitivity of the anaphylactic animal.

As long as one does not lose sight of these undeniable differences characterizing the various forms of allergy, it is constructive to bear in mind the common basis of all these phenomena. For this understanding of a common basis enables one, through application of certain common concepts, to arrive at a wider comprehension of these phenomena, and, through application of certain common methods and technique, to progress in their study and in their management.

Those who criticize the concept of allergy for being too broad, probably feel that the application of such a broad term fails to clarify the nature of a phenomenon to any valuable extent. Their stand would be well-taken if it were true that the designation of a manifestation as "allergic" were intended to constitute a complete or final pronouncement as to its nature, morphology, etiology, or pathogenesis. But this is no more true than when one designates a certain manifestation as being "infectious," for example. No one today objects to a general classi-

phenomena of hyposensitivity in the same individual or in the same experimental animal. I need only recall the fact (1) that injections of foreign substances in animals can lead to both anaphylaxis and antianaphylaxis, (2) that, in the course of tuberculin hypersensitization, there is often a period of tuberculin hypersensitivity, (3) that, in infectious diseases such as tuberculosis, syphilis, and fungus affections, there is a constant interplay of manifestations of hypersensitivity and of increased resistance, or hyposensitivity (positive or specific anergy).

At the present state of our knowledge of the processes leading to specifically acquired hypersensitivity, hyposensitivity, and immunity, it is impossible to regard these as essentially unrelated phenomena. On the contrary, they are clearly subject to the same or analogous immunologic laws, and it continues to be necessary to regard them from a common viewpoint as manifestations of allergy. (This statement by no means implies that hypersensitivity and immunity are identical, nor that the one cannot exist without the other.)

Another attempted modification of the concept of allergy is undertaken by those who would *exclude from allergy those specifically altered states which are produced by living organisms*. In other words, these authors would have to consider all specifically acquired altered states in *infectious diseases* as not belonging within the confines of allergy. All that need be said here is that even the most cursory consideration must make it apparent that such an exclusion is utterly impossible. The very pillars of the concept rest upon specific alterations in infectious processes such as vaccinia, tuberculosis, syphilis, diphtheria, and fungus diseases. Furthermore, an inclusion of reactions produced by nonliving agents and exclusion of reactions produced by living agents would lead to the following absurdities, among others:

1 The phenomena of specific, acquired hypersensitivity to fungi would *not* be termed *allergic* when made manifest by reinoculation with the *living* organisms, but would have to be termed *allergic*, when

brought to light by the injection of the nonliving trichophyton.

2 Koch's fundamental experiment would *not* be accepted as an allergic phenomenon (reinfection with *living* bacilli), while tuberculin reactions would be accepted as allergic in nature.

3 The hay fever attack produced by exposure to the *living* pollen would *not* be termed an allergic reaction, but the response to skin test with the nonliving pollen-extract would necessarily be considered an allergic reaction.

4 Sensitization produced by contact with a *living* plant, such as ivy or primrose, would *not* be accepted as an allergic sensitization, whereas sensitization with Bloch's crystalline primrose excitant, or with ivy extract, would have to be included among the phenomena of allergy.

5 *Rhus dermatitis* would *not* be allergic, lacquer (*Rhus*) dermatitis on the other hand would be included in allergy.

These few examples will surely suffice to show how necessary it is to retain Pirquet's concept that an allergen may be either a "living" or a "nonliving" agent.

Still another attempt to limit the application of the term allergy has been advanced by those who would see the definition of allergy *confined to the acute, explosive clinical manifestations* of the type of asthma, hay fever, and urticaria, and characterized histologically by certain types of tissue response accompanied by edema and eosinophilia. Fortunately, there are but few authors who still have the temerity to advance this unsound and hopelessly untenable limitation.

I am confident that all the aforesaid must have made it sufficiently clear that the largest number of the manifestations of specifically acquired hypersensitivity do not fall within the category of the acute, explosive reactions. Reactions of the asthma, hay fever, and urticaria types are merely representative examples of a certain form of specifically altered reaction. Specific sensitization processes—as has been shown repeatedly—lead not only to such explosive types of hypersensitivity, but to a multitude of other reaction forms, as exemplified by the tuberculin-type reaction, eczematous reaction of contact dermatitis, sarcoid reactions in many infectious diseases, Ar-

clinical division or identification. For example, I see no reason for referring to one type of dermatitis as atopic. This is confusing and misleading as it implies a different fundamental concept. I should rather refer to all classes of dermatitis due to specific hypersensitiveness as allergic dermatitis, and when the specific etiology has been established in a particular case it may then be recorded as allergic dermatitis—contact type, etc. A subdivision of allergy based on a history of heredity is on the face of it untenable. The percentages of positive histories of antecedent allergy in a given case depends entirely on what conditions are included in the questionnaire as being allergic. Years ago statistics were drawn up concluding that forty per cent of hay fever and asthma patients gave a positive history of allergy in their antecedents. These figures were established by asking the patients whether or not any of their antecedents had had asthma or hay fever. It is obvious that the figures would be radically changed when we include urticaria and eczema in our questionnaire, and again when we include various forms of dermatitis, migraine, gastrointestinal disturbances, etc. It is impossible to establish accurate figures relating to the hereditary influence in a condition which is still so vague and where additional pathological changes are constantly being added to our list of accepted allergic diseases, as our knowledge and understanding of allergy increases.

I agree with Dr Sulzberger that the presence or absence of reagins in the circulating blood cannot be accepted as a basis for classification. Dr Sulzberger has advanced so many convincing arguments that it is unnecessary for me to take up time in what would be merely repetition. Peshkin in a recent contribution on the perennial treatment of pollen allergy showed that many cases who gave positive skin reactions to pollen prior to starting treatment, became skin negative to pollen tests and also showed an absence of demonstrable reagins in the circulating blood though many of them still had clinical symptoms of pollen allergy.

As an internist keenly interested in clinical allergy since 1914, I want to sound a note of caution. I have seen waves of overenthusiasm sweep the country and I

have seen evidence of unfair and undue skepticism regarding the clinical practicability of allergy. Both the overenthusiasm and skepticism are the result of lack of fundamental understanding of the phenomenon under discussion. Unfortunately, we must admit that it is only too common an occurrence to have men in general or special practice doing skin tests or having an office nurse do skin tests on their patients with no more background or instruction than a demonstration by some salesman representing a commercial house that will supply the doctor with allergens and treatment sets with complete schedules of dosage, etc. I am not talking about occasional cases for until recently, this was the rule rather than the exception and it was the exception that devoted sufficient time, effort, and thought to a study of the fundamental underlying principles of allergy before attempting to diagnose and treat allergic manifestations. To many, allergy means skin tests, which to them merely means the making of a few scratches and applying the allergen. They completely overlook the great importance of experience and training in the proper interpretation of skin reactions and, what is even more important, the evaluation of skin reactions. This cannot be treated lightly if one wishes to benefit from this additional aid to accurate diagnosis. Certainly no dermatologist would tolerate a skepticism or criticism of the value to dermatology of skin biopsy studies were this skepticism voiced by practitioners without proper knowledge and training in skin pathology.

One must guard against undue and unsound overenthusiasm and not be carried too far by theory, however, the fact that innumerable clinical disorders are the result of a specific hypersensitiveness is now well-established and recognized. It is earnestly recommended that a more serious attempt be made to instruct physicians and students in the fundamental underlying principles of allergy and that recognizing the impossibility of becoming expert in every branch of medical practice, that a more effective cooperation be established between those not particularly interested and those intensely interested in allergy and equipped to properly investigate a case from this standpoint.

WHY THE BIG TRIAL HANGS FIRE

The great court trial to decide whether the Coney Island blood-pressure-testers were illegally practicing medicine has been postponed indefinitely, as the one who was

arrested has jumped his bail and gone to parts unknown. If he is not recaptured, the matter may be shrouded in doubt forever.

fication of certain manifestations as "infectious," in spite of the fact that many of these manifestations are widely divergent in every respect, except for the one common attribute that they are all due to living agents. The classification of these many conditions as "infectious" has surely proven to be constructive, as it has enabled us to study them under certain common laws.

Just so has it been proven of great value to designate many divergent skin manifestations as "allergic."

However, the concept of allergy will continue to be valuable in the study of skin diseases, only if dermatologists remember that the designation "allergic," far from being a final disposition, merely signifies that a given manifestation can now be envisaged from the common viewpoint applicable to all phenomena based upon a specifically acquired altered capacity to react.

von Pirquet's concept has proven to be of incalculable value, both theoretical and practical, in dermatology, and it promises to continue to be so, as long as we bear in mind that calling a condition "allergic" is only the first step leading to its investigation and study with the methods and technic, and under the common laws of allergy.

It is certain that my colleagues in this Symposium, Drs. Abramowitz, Hopkins, Peck, and Schwartz, have done ample justice in citing the many investigators who have contributed in such outstanding fashion to the establishment and

development of the study of allergy and its manifestations. I have therefore refrained from mentioning specific names or references. However I should like to recall that it was certainly Bela Schick, who was a foremost pioneer (1903-1905 and 1906) and who has contributed among the most important and original observations in this field (Serum disease, tuberculin allergy, the theory of the incubation period, etc.) His published works were among the very first to clearly demonstrate the quantitative and qualitative alterations in allergy.

I must refer to the excellent bibliography of von Pirquet's article² for the further information of those who wish to penetrate more deeply into the early development of studies in these immunologic phenomena. Among the 142 references to authors of basic early works will be found such important contributors as Karl Landsteiner, Finger, Moro, Rosenau and Anderson, Otto, Richet, Koch, Detre-Deutsch, Wolff-Eisner (the first to recognize the nature of the hypersensitivity in hay fever), Wassermann, Arthus, Besredka, Calmette, Blackley, Dunbar, and many other equally important names.

Among the many authors of subsequent dermatologic contributions to allergy, two names are of such undoubted pre-eminence that I am certain you have heard them repeatedly. I refer to the two most illustrious pioneers in dermatologic immunology, J. Jadassohn and Bruno Bloch.

Now that these two have finally ceased their works, it is but fitting that we recall how much of our present knowledge of dermatologic allergy is directly or indirectly due to the wide vision, the patient experimentation, and to the inspiring influence of these two masters.

962 PARK AVE

References

1. von Pirquet, *Wochenhefte der inneren Medizin*, 30 1457, 1906.
2. Idem, *Ergebnisse der inneren Medizin und Kinderheilkunde*, 1 421, 1908.

Discussion

DR. MAXIMILIAN A. RAMIREZ, *New York City*—At the outset I wish to congratulate Dr. Sulzberger on his excellent presentation of a difficult subject. I admire his courage in attempting this colossal task. He has made it not merely difficult, but practically impossible for me to formulate any sort of a worthwhile discussion. He has presented so skillfully prepared a brief for the defense that even the most astute legal minds among you will be taxed in what will prove to be a futile effort to challenge Dr. Sulzberger's contentions. I agree with practically everything that he has said. Our concept of allergy and what should clinically be accepted as allergic is indeed broad and covers practically every branch of medicine and surgery, but as Dr. Sulzberger has so aptly

insisted, this in no way modifies our concept of this phenomenon. It is only the repeated attempts at coining new words to apply to one particular group or another that tends to weaken the structure on which we stand. It adds to our confusion rather than serving to simplify our understanding.

Zinsser, Ratner, Kolmer, Peshkin, and others have repeatedly stated that a close similarity between human and animal hypersensitiveness must be recognized. There is no advantage and no logical grounds for introducing or retaining the term atopic. I agree with Dr. Sulzberger in desiring to adhere to von Pirquet's original definition and should prefer to use the term allergy as all inclusive, using other descriptive phrases or names as a means of further

If the shouted voice is heard, it means the hearing loss is not over ninety db, and vice versa.

Note The examiner does not know exactly how sounds appear to a patient because every ear is an entity as to the quality of reception.

The *phonograph audiometer (4A)* is a very satisfactory instrument for speech tests because it is calibrated for intensity. It is most valuable for group testing. Its use of figures opens up more possibilities for guessing than would unrelated words.

Its limitations are that it is expensive, bulky, its records break and wear out so that upkeep is considerable, its intensity is limited.

Tuning forks

If properly designed, manufactured, and standardized, tuning-forks are precision instruments. They are cheap, easily transported, and there is no upkeep.

Disadvantages are that one or two tests per fork are apt to be misleading. According to the law of chances, four runs with each fork are necessary to give twice the accuracy of a single run. This means that for the five forks of the Hartman set at least twenty runs must be made at each complete testing. On the average this will consume about an hour. This is more time than can usually be given.

There are limitations in that there is no provision for the upper parts of the frequency or intensity ranges. The latter limitation is important only in severe deafness. Unless standardized and calibrated, the tests are not comparable with tests made by others using different forks. Results will differ with make of fork, technic, and even between two tests made by the same tester.

Tuning-forks die down on the average more quickly directly with frequency. The lower forks die down slowly, (only about one quarter to one decibel a second) whereas the higher forks (1024, 2048) have a decrement of two to four decibels a second, depending upon the make used and the condition of the fork. The high forks die down so quickly that it is difficult to make accurate measurements of the time they are heard. The decrement rate of a fork used for bone conduction, is greater than when it is used for air conduction because of the damping effect

of the contact with the head. The use of forks usually entails too many variables for precise measurements.

The author believes his method of alternate placement is the most satisfactory way of testing the hearing with tuning forks. This method will be described under "Examiner."

1A and 2A Western Electric (and other) audiometers have wide range of frequencies and intensities, a steady sufficiently pure tone which may be applied again and again and sustained at any desired intensity. There is no gradual fading out as in tuning-forks, there is conservatism of time and effort of examiner and patient and avoidance of fatigue because of the short time the patient is required to listen.

Air conduction and bone conduction may be measured in the same units (sensation units or decibels).

(A decibel "db" or sensation Unit "SU" is the standard unit of measure for sound intensity. One decibel is the minimum amount of loudness *change* that can be sensed as such. It is a relative term. The audiogram is made on a logarithmic scale, etc.)

There are some disadvantages. Audiometers are expensive and cumbersome, there is some upkeep on account of breakage, and the bone conduction receiver is often inefficient, unstable, and fragile. In the 2A audiometer, the intensity scale is not much greater than it is in tuning-forks. The 1A audiometer is very expensive but the most satisfactory instrument yet produced for precision measurements of the hearing acuity. Maintenance of accurate calibration is imperative for all instruments.

Patient

The great majority of patients are cooperative, attentive, and fairly accurate observers irrespective of their ability or training or of their degrees of deafness.

Some are not so and, try as they may, accurate observation appears for them to be difficult or impossible. This may be due to age, insufficient vocabulary, nervousness, stupidity, lip reading ability, or familiarity with the voices, words, phrases or mannerisms of the speaker or examiner. It is frequently due to the inexperience of the examiner.

PRECISION HEARING TESTS

Interpretations in the Light of Recent Research

EDMUND PRINCE FOWLER, M D, *New York City*

The primary objective in testing the hearing is to obtain an accurate picture of hearing acuity. Obviously, an inaccurate picture may lead one far astray not only as to the hearing but as to the diagnosis of ear disease, or any disease causing deafness. It is unfortunately quite the custom to obtain an inaccurate, a blurred or a partial picture.

The hearing tests are only one of the aids, not the only aid or the only tests, used for diagnosis. One may often make a diagnosis of ear conditions with very superficial or even without any hearing tests, but I assert that without precision tests fully fifty per cent of all diagnoses are faulty as to differentiation of lesions and of course quantitatively worthless, prognostically of little value, and therapeutically of little use.

Obstacles to accurate testing may arise from any or all of the three elements necessary to every test, i.e., the apparatus, the patient, and the examiner.

Apparatus

The testing room should be sound-proofed, or so protected that outside noise is not heard by the patient. In the usual quiet ward of a hospital, noise may cut down the hearing fifteen to twenty decibels below its true level.

For distance testing, the room should be about thirty feet long with sound damped walls, far enough apart to prevent the interference from sound reflections as in pipes or conduits. For testing at short distances, (within three or four feet of the patient) it is of course not necessary to have the large room.

The noise level should be below the patient's minimum audibility level.

Sound sources

The watch, metronome, bunch of keys, snapping fingers, etc., may be used only to test the hearing for their own particular tone or noise, and depend upon

distance measurements. They are crude and practically useless for determining the hearing acuity and for diagnostic purposes.

Monochord and whistles have a wide range of frequencies but are not calibrated for intensity and therefore useless except to determine whether or not the ear hears the sounds produced. One cannot determine how well the ear hears them. The Galton and Galton-Edelmann whistles are open to the same criticisms, and often emit several sounds besides their true tone. It is difficult to tell which sound the patient is hearing.

I shall not discuss further any of the above mentioned instruments at this time because they are *relatively unreliable and obsolete for precision testing.*

The voice as faint or loud whisper, and as faint, moderate and loud voice, may be approximately calibrated and is then a more useful sound source than most of the instruments heretofore mentioned and better than any of them for determining the acuity of hearing for speech. Attention is called to the fact that threshold intensities do not give as accurate a picture of the hearing acuity for speech as does the articulation percentage using louder sounds. No one except for special reasons listens to threshold intensities. I shall discuss this in more detail anon.

Properly used the voice may be calibrated not only for each examiner but with loose approximation as between examiners.

If the faint whisper is heard at 30", it means the hearing loss is not over thirty db, and vice versa.

If the loud whisper or faint voice is heard, it means the hearing loss is not over forty-five db, and vice versa.

If the moderate voice is heard, it means the hearing loss is not over sixty db, and vice versa.

If the loud voice is heard, it means the hearing loss is not over seventy-five db, and vice versa.

Instructional talk at the Annual Meeting of the Medical Society of the State of New York, New York City, April 28, 1936

The *Rinne test* is perhaps the most popular of all the older devices for differentiating nerve from obstructive lesions. If one's forks be carefully calibrated and used with proper technic, Rinne is unnecessary. It is often uncertain for diagnostic purposes and of practically no value quantitatively. A positive Rinne means that the fork is heard before the ear after it has ceased to be heard upon the mastoid. A negative Rinne means that the fork is heard on the mastoid after it has ceased to be heard before the ear. These results vary in different degrees with frequency and with forks. One may obtain a difference between the two modes of placement, but not a ratio, because the rate of decrement is quite different for a fork before the ear and a fork in contact with the head.

When using the voice, tuning-forks, or other sound sources, be careful to have the patient's eyes closed so he cannot see the manipulation of the sound source. If the patient observes to which ear a fork is applied, there is no need for him to listen to determine in which he is supposed to hear it. (Test with eyes closed.) Inconsistent responses will lead one to suspect errors. The patient may misinterpret feeling for hearing. My 128, 256, and 512 forks may be felt on the fingers at practically the same intensities as for minimum audibility by bone conduction on the mastoid process. (Explain the necessity of distinguishing feeling from hearing.)

Few examiners use a standard blow for activating forks. In my opinion, the best blow is obtained by striking the fork on a hockey pock or rubber heel, with what I call a maximum blow, that is, a blow sufficiently strong to produce the loudest tone of which the fork is capable, and yet not so loud as to damage the fork. If this is done, the fork will settle down to a steady decrement within a fraction of a second, and the longest possible vibration time will have been obtained.

Without any change in the hearing, the functional tests may vary considerably from time to time owing to variations in the three elements we are discussing, namely, instruments, patient, and examiner.

In my opinion there is only one way to obtain accurate and universally under-

standable tuning-fork data. I introduced this method fifteen years ago. It is called the complete alternate placement method, and is carried out as follows:

Use calibrated forks. (The method of calibrating tuning-forks is by dividing the loss of hearing in seconds with the loss in decibels, or vice versa, as determined by testing a markedly deafened ear at the same frequencies on a standard audiometer. This will determine the number of seconds required for one decibel loss or the number of db per second of time loss as the case may be.) Hold the shank of the fork between the thumb and forefinger with the prongs in a vertical plane, and strike the tip of one prong on a hockey pock with sufficient force to put the fork into maximum vibration. Stand in front of the patient (whose eyes are closed) and present the fork before the ear at a distance of one inch. Hold it in this position not over one and one-half seconds and then place the end of the shank against the mastoid process at a point where it is heard best, and allow it to contact the mastoid quickly and firmly enough to elicit the maximum sensation (not over one and one-half seconds). The best position is usually just behind and a trifle above the external auditory canal. Be careful to hold the pinna forward so that it does not touch the fork or close the meatus.

Change one position of the fork from the mastoid to before the ear every two and one-half seconds (five seconds for the complete cycle of placements) and alternate these placements until the sound ceases to be heard both by air conduction and bone conduction. This causes the fork to die down at approximately the same rate during each five second interval of time.

Start a two hand stop watch coincidentally with the activating blow. Both hands will be set in motion. At every placement of the fork the patient is to answer "yes" if he hears it and "no" if he does not. Or, may be better still, to answer "yes" if he hears it and say nothing if he does not hear it. At the first placement at which the patient fails to answer "yes" push the button which stops one hand of the watch. This gives the number of seconds the fork was heard by air conduction or bone conduction depending upon which mode of placement first coincided with failure to hear it. Continuing the placements as before pressing the other button stopping the other hand when the patient again ceases to answer "yes." This gives the number of seconds the fork was heard by air or bone conduction as the case may be. The last timing

Quality of speech is variable in every one, but on the part of the hard of hearing the apparent lack of ability for exact mimicry may not be due to inability of speech production but to an abnormal sensing of the sounds heard. In other words, sounds may appear different to different ears, and consequently when mimicked are reproduced differently, not necessarily as spoken by the examiner.

Impacted cerumen, fluids or foreign bodies in the meatus or middle ear may lower the hearing up to fifteen to twenty db.

Marked deafness often makes it difficult to procure sufficient intensity for the patient to hear the sounds used for testing, and to mask out one ear while testing the other.

Tinnitus causes uncertainty by disturbing and masking effects, whether it is in one or in both ears.

Pain or tenderness about the ear may prevent testing with air or bone conduction receivers.

Fatigue of body, mind or of the ear, lowers acuity of hearing.

Methods for overcoming these difficulties will be described under "Examiner."

The usual hearing tests appear accurate for threshold sounds. They do not necessarily tell us how the ears hear sounds louder than threshold and yet it is the louder than threshold sounds to which our ears are accustomed to hear conversation. This subject will be taken up under "Examiner."

Examiner

The chief obstacle to exact testing is an examiner who is careless, hurried, uninformed, insufficiently trained or who uses obsolete methods.

Tuning forks

Every otologist is familiar with the classical tuning-forks tests. I shall speak of them but briefly at this time. Tuning-forks have one great defect, they constantly die down, which necessitates the patients listening to a constantly diminishing tone. This is conducive to inaccurate observations.

The examiner should know the advantages, disadvantages, and limitations of the different tests, and the different

methods of recording in numbers, fractions, and graphs.

The examiner should know (1) the fundamentals of the physics of sound as applicable to otologic practice, (2) that sound waves may be below the threshold of hearing, at threshold, above the threshold and at or above the threshold of feeling, (3) that by bone conduction there is on the average only about four decibels impedance through the skull so that the ear not being tested must be masked to eliminate it as a disturbing factor in Monaural B C tests, (4) that by air conduction when the loudness necessary for hearing approaches fifty decibels above that required for the other ear, masking must be employed to determine which ear is really hearing the sound, (5) that unless bone conduction is obtained at the same frequencies as air conduction, the audiogram picture may be very misleading, and that great care is necessary to avoid air conduction with the higher frequencies. It is usually impossible to do this with the higher forks, and difficult even with a bone conduction receiver. Do not touch the ear with fork or bone conduction receiver. Do not close the meatus.

The Weber test is not properly a test for hearing acuity but is used solely for the purpose of determining whether monaural deafness is of nervous or obstructive origin. It may be elicited by the use of tuning-forks or the audiometer bone conduction receiver, and in other ways. It is of value in marked unilateral deafness, if it corroborates other findings. Weber may be referred to one ear using a fork of one frequency and to the opposite ear using a fork of another frequency. It may even change from one ear to the other during the placement of a single fork. It is unnecessary—even superfluous—if modern methods are used.

The Schwabach test has defects inherent in most tuning-fork tests (Faulty forks, faulty calibration, difficult technique, audibility by air conduction).

The Gelle test is now used but seldom and is of questionable value. When positive, it is supposed to indicate stapes mobility, when negative stapes ankylosis. It is not specific for stapes ankylosis because other impedences in the middle ear may give negative results.

The Rinne test is perhaps the most popular of all the older devices for differentiating nerve from obstructive lesions. If one's forks be carefully calibrated and used with proper technic, Rinne is unnecessary. It is often uncertain for diagnostic purposes and of practically no value quantitatively. A positive Rinne means that the fork is heard before the ear after it has ceased to be heard upon the mastoid. A negative Rinne means that the fork is heard on the mastoid after it has ceased to be heard before the ear. These results vary in different degrees with frequency and with forks. One may obtain a difference between the two modes of placement, but not a ratio, because the rate of decrement is quite different for a fork before the ear and a fork in contact with the head.

When using the voice, tuning-forks, or other sound sources, be careful to have the patient's eyes closed so he cannot see the manipulation of the sound source. If the patient observes to which ear a fork is applied, there is no need for him to listen to determine in which he is supposed to hear it. (Test with eyes closed.) Inconsistent responses will lead one to suspect errors. The patient may misinterpret feeling for hearing. My 128, 256, and 512 forks may be felt on the fingers at practically the same intensities as for minimum audibility by bone conduction on the mastoid process. (Explain the necessity of distinguishing feeling from hearing.)

Few examiners use a standard blow for activating forks. In my opinion, the best blow is obtained by striking the fork on a hockey pock or rubber heel, with what I call a maximum blow, that is, a blow sufficiently strong to produce the loudest tone of which the fork is capable, and yet not so loud as to damage the fork. If this is done, the fork will settle down to a steady decrement within a fraction of a second, and the longest possible vibration time will have been obtained.

Without any change in the hearing, the functional tests may vary considerably from time to time owing to variations in the three elements we are discussing, namely, instruments, patient, and examiner.

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standable tuning-fork data. I introduced this method fifteen years ago. It is called the complete alternate placement method, and is carried out as follows:

Use calibrated forks. (The method of calibrating tuning-forks is by dividing the loss of hearing in seconds with the loss in decibels, or vice versa, as determined by testing a markedly deafened ear at the same frequencies on a standard audiometer. This will determine the number of seconds required for one decibel loss or the number of db per second of time loss as the case may be.) Hold the shank of the fork between the thumb and forefinger with the prongs in a vertical plane, and strike the tip of one prong on a hockey pock with sufficient force to put the fork into maximum vibration. Stand in front of the patient (whose eyes are closed) and present the fork before the ear at a distance of one inch. Hold it in this position not over one and one-half seconds and then place the end of the shank against the mastoid process at a point where it is heard best, and allow it to contact the mastoid quickly and firmly enough to elicit the maximum sensation (not over one and one-half seconds). The best position is usually just behind and a trifle above the external auditory canal. Be careful to hold the pinna forward so that it does not touch the fork or close the meatus.

Change one position of the fork from the mastoid to before the ear every two and one-half seconds (five seconds for the complete cycle of placements) and alternate these placements until the sound ceases to be heard both by air conduction and bone conduction. This causes the fork to die down at approximately the same rate during each five second interval of time.

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will always coincide with that mode of placement of the fork which predominated. In deducting these from the number of seconds the fork is heard by the normal ear, the examiner will know the number of seconds loss by air conduction, and the number of seconds loss by bone conduction. The fork having been calibrated by the alternate method of placement, it is simple to figure the hearing loss in decibels, and to construct an audiogram in the same way as when using an audiometer. The examiner has obtained in standard units of measure the hearing loss for air conduction, and for bone conduction, and he has only used one run of the fork to obtain both of these. By no other method is it possible to do this with tuning-forks.

You will notice that I said to hold the fork before the ear at a distance of one inch. This is done so that if the patient does not respond at once as the fork is placed before the meatus, it may be moved quickly about half an inch closer to the ear to give the patient a second chance to hear the sound. If the fork were held closer to the ear, the examiner would not have the distance necessary to enable him to bring the fork closer, without endangering contact with the skin of the ear or the hair, either of which would damp the intensity of vibration and spoil the test.

For the lower frequencies, the method as described is very accurate because the loss in decibels per second is, for well-made lower forks, on the average but one second, or less.

For the higher frequencies, the loss in decibels per second is nearer two to four. Therefore, if our alternating placements are made every two and one-half seconds, there is a five second interval between mastoid placements and a five second interval between the "one inch from the meatus" placements. This number of seconds between the patient's opportunities to listen, means that a fork will have died down some ten to twenty decibels between each placement. This is too great a number for accuracy, and therefore, for the higher forks I advocate a greater speed in alternating placements, namely, one and one-half seconds (three seconds for each cycle). Of course, the higher forks should be calibrated using this speed of alternate placement. By carrying out the tests in this manner, it is

surprising how accurately the results will correspond to the audiometric data obtained by a properly calibrated audiometer.

There are several advantages to this method of using the tuning-forks

- 1 Standard maximum blow

- 2 Possibility of calibrating forks in the same units of measure for air conduction and bone conduction

- 3 Saving one-half the time required to take air conduction and bone conduction separately

- 4 Prolonging the time the fork can be heard, and lessening fatigue, by the intermittent placements

- 5 Overcoming the disadvantage of the constantly lessening intensity of the fork by holding it an inch away from the meatus thus giving room to bring it quickly nearer to the ear if the patient does not at once sense the tone. (*Note* Near minimum audibility the gain in intensity by moving the fork a half inch closer to the head is, owing to the lag in making this change in position, not over three or four decibels. This means that the patient is really getting a chance to listen again to the same intensity as when the fork was first placed an inch from the head.)

To be accurate, four runs should be made for each fork used. If pressed for time, I advise using only the 256, 1024, and 2048 forks. This will give a more dependable picture of the hearing, than if all five of the Hartman forks were used once or even twice.

I now use this test only to supplement and check up on audiometer testing. It takes at least three or four times as long as audiometer testing.

The examiner should be familiar with the audiometer and understand audiograms and audiometric measurements. In the very near future, we shall be able to purchase excellent audiometers at a third to a quarter of the present prices and this will do more for universal understanding of functional tests than anything in the past. The technic of using the audiometer is easily acquired, but no otologist should accept without critical scrutiny the measurements obtained by his nurse or technician. The most obvious errors will escape his notice unless he personally knows how to detect faulty measurements.

If tinnitus interferes with accuracy, increase the loudness fifteen or twenty

decibels above the apparent threshold of hearing for the ear being examined. This will tend to exclude the tinnitus as a masking sound to the frequency being tested. Balance this loudness against a loudness in the opposite ear of the same number of decibels above its threshold. If the balance, as indicated by the number of decibels above threshold, maintains the same ratio between the two ears as at the minimum audible intensities, the threshold measurements may be considered as accurate. If the balance is changed, the threshold measurements were inaccurate and should be changed accordingly.

The following points may be of interest

- 1 Caution the patient not to press the light button when he hears only audiometer switch noises

- 2 Always allow the patient to hear the tone distinctly before approaching the threshold intensity so that he may be certain of the tone to which he is to respond.

- 3 Approach the threshold both from above and below, without using the interrupter, then while using the interrupter

- 4 I have always favored double receivers with rubber caps not only because they eliminate ten to fifteen decibels of outside noise, but because they enable you to switch the sound from ear to ear, and if the patient cannot tell in which ear he hears the threshold intensities, the examiner must suspect the accuracy of his response

- 5 Do not ignore the practice factor. On the average, second tests are a little better than the first tests

- 6 Spread or scattering observations made at a single frequency will indicate inaccuracies introduced by apparatus, patient or examiner

- 7 With differences of more than forty decibels between the two ears, suspect cross audition, and use masking in the better ear for air conduction. Bone conduction cannot be accurately obtained for abnormal ears without masking the ear not being tested.

Masking

Masking is one of the most important adjuncts in the functional examination of hearing. It is almost universally neglected, even when using bone conduction, with which it is imperative to mask the opposite ear in order to be assured that only one ear is hearing the testing sound, even when the worse ear is markedly

down by air conduction. *Masking should always be applied first to both ears and with sufficient intensity to mask out the ear not to be tested.* It requires at least forty db less intensity to mask air conduction than bone conduction because air conduction sounds reach the opposite ear with a loss of forty to fifty decibels. Only in this way may one make certain of efficient exclusion of the ear not to be tested.

A simple improvised method for masking one ear is to blow a stream of air from the lips into and across the external auditory meatus of the patient's ear. A binaural improvisation is to use an ordinary stethoscope in the patient's ears and to blow into and across the bell of the stethoscope during each application of the sound in front of the ear or upon the skull. For monaural masking by this method, remove the stethoscope on the side that is to be tested and carry out the blowing as before. I proposed this simple method some twenty years ago not only for masking but as an aid in detecting malingering. If the subject has hearing, it is difficult for him not to alter the loudness of his voice as the intensity of the masking is increased and diminished, and as the loudness is changed from one side of the stethoscope to the other. A sure sign of hearing is after masking with slowly increasing intensities, to notice patient's voice increase in loudness coincidentally with the masking noise. Monaural and binaural malingering may be detected in this manner.

If the stethoscope is connected through a "Y" piece with rubber tubing to a source of compressed air, one has a most efficient and constant intensity masking apparatus. It is well to cut some slits in the tubing near the source of air supply so that noise may be produced by the air rushing by these slits, as well as by its escape at the ear pieces, because to some people the latter is uncomfortable. In a normal ear, this method will mask the loudest shouted voice, and pure tones by air conduction up to ninety or more decibels intensity. It is more difficult to mask bone conducted sounds than air conducted sounds. It is more difficult to mask an ear with pure conductive or mechanical deafness than an ear with pure nerve deafness because the former

has good bone conduction and the latter, in order to be diagnosed as nerve deafness, must have lowered sensitivity by bone conduction

We know of no way to make, with certainty, a diagnosis of nerve deafness without a loss of hearing by bone conduction sounds, but unless the opposite ear is devoid of all hearing, it should be sufficiently masked to insure accurate observations of bone conduction by the ear being tested

I am aware of the skepticism in regard to the measurements made by bone conduction, but we must do the best that we can with the means at hand and, as I have said before, this is the only way that we have to determine nerve deafness. Next month, at the meeting of the American Otological Society, I shall present a new method for aiding in diagnosis. By this method, conductive lesions, nervous lesions, and both of these coincidentally, show differentiating characteristics. It is inadvisable to discuss this further at this time except to state that these new methods of approach to the physiology and pathology of the ear, substantiate with certain possible exceptions the findings by bone conduction.

In making audiometric measurements for the purposes of diagnosis, it is not

always necessary to examine at all the frequencies. One of the lower tones (say 256) a middle tone (1024), and the higher tones, 2048, 4096, and 8192 will, ninety-nine times out of one hundred, be quite sufficient if obtained with proper technic. All but 8192 should be tested by bone conduction.

The custom of stating hearing ability in percentage is to be discouraged. I was mistaken when cooperating in the production of the first audiometer, to insist upon setting up a percentage scale in addition to the sensation or decibel scale. There is, strictly speaking, no way of figuring a percentage loss of hearing because there is no true upper limit. The assumed upper limit at the threshold of feeling is, of course, artificial because it is not the upper limit of sound intensity. Sounds much louder than this may be heard. Instead of stating that one is down such and such a percentage in hearing, it is more accurate to say that one is down so many units at a given frequency, or the average of so many units at such and such frequencies, or that the hearing loss is equivalent to a loss in distance estimated approximately by figuring one-third to one-half of the distance for every ten decibel loss.

140 E 54 St

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Symposium: Industrial Diseases and Accidents to the Hand

DERMATOSES OF THE HANDS

B J SLATER, M D, *Rochester*

In discussing the subject, "Dermatoses of the Hands," no claim is made that we are approaching this subject from the point of view of an experienced dermatologist. Our experience is that of a physician in industry who has for seventeen years treated various skin conditions, many of which have arisen out of and during the course of employment. During this period of time, we of course, have come in contact with many cases, in some of which the industrial origin has been established, while in others no etiological factors have been found.

Broadly speaking, there is no field of medicine in which there is greater need for research than dermatology. This becomes particularly true as an ever-increasing number of chemicals are finding their way into industrial use. Certain facts have been known for years in regard to the dermatoses, the exact nature of which is not understood. The exact physiological reason, for example, as to why blondes are more susceptible than brunettes is not understood, neither is the broad question of idiosyncrasy to chemicals, any more than it is understood why certain individuals are hyper-susceptible to various drugs.

Recently, the sulphur content of the skin has been given study, and perhaps this may offer some explanation for increased susceptibility. The peculiar photosensitivity of certain individuals is also of intense interest, and certainly explains some otherwise baffling cases.

Dr Alice Hamilton has strongly urged the establishment of an Industrial Institute in which various phases of industrial toxicology would be studied. Of these, dermatological researches could easily occupy a predominant place. If the fundamental reasons underlying idiosyncrasy and susceptibility could be established, great steps could be taken in protecting

certain groups of individuals. The problem is almost too large for one industry to undertake, when viewed in its broader aspects. In America, the Harvard Medical School has made notable contributions on various subjects of industrial interest, and has published a very interesting magazine dealing entirely with industrial health problems. It is a healthful sign to see the increased interest which medical schools are taking in such problems and it is safe to say that the future will see a greater activity in this direction.

No effort will be made here to describe the physiology or anatomy of the skin. This has been done before in many interesting articles. To those, however, who are anxious to study the basic principles which rule the skin irritants in industry, we especially commend R. Prosser White's address before the 6th National Congress for the Study of Accidents and Illnesses, on the various fundamental reactions of the skin to different irritants, wherein an attempt is made to physiologically interpret the reaction of the skin to various offending substances.

The introduction of the patch test has been of the greatest assistance in isolating the offending agent and has proved of tremendous value to industrial physicians and to others, and has been to industrial dermatologists, what the Wassermann reaction has been to syphilologists. There is no question but that by means of this test, the physician has been able to isolate various chemicals which were hitherto unsuspected.

To those who are interested in the broad general subject, we recommend R. Prosser White's excellent text book¹. Recently, medical literature has presented several fine articles bearing on this subject, for example, Osborne and Putnam² have written a very instructive article. The authors have shown with what metic-

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ulous care the subject must be pursued, and have by various illustrations shown the success which awaits the careful investigator. This article is an invitation to all physicians interested in the subject, to be painstaking.

Levin³ has written another very interesting article which contains a good classification of skin irritants. Similarly, Doctors Eller and Schwartz⁴ have written a very comprehensive article on the industrial dermatoses, together with a very comprehensive classification and bibliography. Were it not for the fact that these classifications are so thorough, we might submit a classification in this article. They, however, acquaint the practitioner with the broad general background of the subject.

From the compensation point of view there is scarcely any subject which offers greater difficulty in establishing causal relationship, than the dermatoses. When one realizes the number of agents in and out of industry which may cause an irritation of the skin, it is not to be wondered that referees are baffled in trying to decide on the equity of a particular case. As a general rule, the attitude appears to be that if a person suffers from a dermatitis, and the substance with which he is working is capable of producing the dermatitis, it is assumed that the one produces the other. Lacking specific information on the subject, it is difficult to see how the referee could adopt another attitude.

It is, of course, a well-known fact that many people who are exposed to no known hazard, at times present baffling dermatoses of the hands. As a matter of fact, two executives who are exposed to no known hazard, have presented the most stubborn cases of dermatoses of the hands. If these two individuals were exposed to solvents, carbon tetrachloride, alkalis, acids, and many other substances they would, without question, be diagnosed as industrial or occupational dermatitis. As a matter of fact, no such hazard exists and the exact etiological factor is unknown. In this connection, Becker's⁵ excellent article is of great value. The fact that an employee may be handling a substance which is capable of producing a dermatitis, is not of itself sufficient reason why the physician should in every instance stop

his investigation when such facts are brought to light. In other words, every case is entitled to a thorough investigation, and the practitioner should seek as his fundamental guide, the establishment of the truth, no matter what its sociological or industrial bearing may be. It is not good medicine to assume that every skin irritation which arises in medical practice is due to an industrial process, all other opinions to the contrary notwithstanding. Similarly, all neuroses that arise in industry are not due to trauma, or to industry.

We are advised that dermatoses constitute the greater number of industrial diseases in certain states. Comparable figures furnished by Dr R S McBurney⁶ show that in New Jersey, Mass., Conn., and Ohio, the industrial dermatoses led the list of occupational diseases. It is generally estimated that from two to sixty per cent of all dermatoses are industrial in origin. It is further estimated that one per cent of all workers suffer from some form of occupational dermatitis. It has not been our experience that dermatitis forms a large percentage of the cases reported in the average industrial clinic, and we are not led to believe that the higher figure of sixty per cent expresses the truth as regards industrial origin of these dermatoses. Under the present New York law, any substance which causes any disease is compensable if disability arises from its use. There is, of course, no question of carelessness or contributory negligence involved.

Dr Anderson in discussing Osborne and Putnam's paper, points out the fact that occasionally a physician prescribes mercury for a patient with the result that the patient develops a mercurial dermatitis. A physician in this instance would, of course, feel very badly if he were legally penalized because of the fact that his patient showed an idiosyncrasy to the mercury. As a matter of fact, industries are penalized very often under exactly the same circumstances. Ninety-nine workmen may be exposed to a certain chemical and show no irritation of the skin. The hundredth one, however, may prove to be susceptible. If there is disability, compensation naturally follows.

There is no question but that this type

of disease is ever on the increase. This may be due to the fact that physicians are becoming more familiar with the law, or they may be becoming more accurate in their diagnosis.

Figures reported by the State Department of Labor show an increasing amount of dermatoses. It is doubtful, however, if the number reported represents the actual number in industry, in many instances the disability is not great, and certainly not disabling. Where there is no loss of time, and no compensation paid, the disease will probably not be reported to the Industrial Commissioner, even though the law requires that it should be. On the other hand, proneness of physicians to favor the workmen at the expense of the industry may frequently result in cases being reported in which further study would have shown them not to have been of industrial origin.

The ubiquity of the hand invites trouble and frequently finds it. Without being able to give specific figures, our experience shows the hand to be the most frequently involved. There are certain general characteristics which characterize the occupational dermatitis. In the first place, if the physician is familiar with the substance the employee is handling, he is in an advantageous position to determine the cause. This means an inspection of every phase of the work in which the patient is engaged, together with inquiry into his home conditions.

If health records are kept of employees for a period of years, it may be shown to be a seasonal occurrence of the dermatitis. For example, we have had three cases of sumac poisoning in which the patient is engaged, together with inquiry occupational disease. It was the regular occurrence of the disease, at the same time of the year which led to our suspicions.

If the rash disappears on cessation of the work, it is safe to say that the occupation is the provocative factor. It is well to inquire if the patient is better after the week-end. It was noticed in an ammunition industry that the workers on Monday morning appeared better than the preceding Friday. In other words, the dermatitis had practically cleared up. The fact that other employees suffer from the same condition at the same time is also of diagnostic aid. Most lesions are on

the back of the hand. It is well to examine for evidence of friction. Dr. Templeton⁷ says that wash women, by pressure of their nails on the wash board, in the presence of alkalis may produce onycholysis.

The conductor of an orchestra is proud of the lesion produced on his finger by his baton. The surgeon is not so proud of the lime and soda dermatitis resulting from attempts to sterilize his hands. The shoemaker who waxes his cord with his thumb probably will show the effects not only in the shape of the thumb, but the character of the epidermis. A close inspection of the hands may reveal the character of the work in which a person is engaged.

By far, the most numerous cases of dermatitis is our experience are due to the ordinary ringworm, or trichophyton. Efforts at prevention of this disease in industry should follow those adopted in public schools and gymnasiums, as suggested by Osborne. Two formaldehyde foot baths have been installed in our plant, with a lessening of the number of cases of ringworms of the hands and feet. The second in importance appears to be the ordinary garden variety of scabies. In practically every instance that we have discovered scabies, the employee has felt that it was due to some chemical which he was handling. One employee was vehement in claiming his finger lesions were due to his work, and was very much surprised to find how readily it yielded to sulphur ointment.

There are certain trades predisposing to dermatitis of the hands. Certainly, moisture favors ringworm. While it is clear that ringworm, per se, is not an occupational disease, it is frequently made so by assuming that a trauma of a particular type or of a constant type has assisted the entrance of the infection into the hand. It is hard to see how scabies could be interpreted as an occupational disease unless it could be proved that one employee contracted it from another which of course, in practice would be hard to do.

It is, of course, entirely impossible to mention all of the substances which may cause a dermatitis. The classification of Eller and Schwartz is fairly broad, but of course cannot possibly include all sub-

stances For example, certain kid gloves, woolen gloves, and in one particular instance, gloves of all kinds, cause a dermatitis The rotogravure section of the Sunday newspaper, toilet water and lotions, Flit, and of course, plants such as primrose, poison ivy, sumac, and many fruits and vegetables, such as lemons, oranges, tomatoes, have been known to cause a dermatitis to certain individuals

One employee developed a severe dermatitis of his forearm The only cause that could be determined was the fact that his suit was cleaned the previous day with carbon tetrachloride.

It is well to bear in mind that certain drugs may cause a dermatitis, although this is not so particularly true of dermatitis located on the hands as on the body

While we are aware that certain individuals may artificially produce an irritation of the skin, we have found no cases in our experience in which this was proven or even suspected

Two cases of dermatitis of the hands have arisen from treatment It is well-known, of course, that iodine and mercury in the same injury may set up a dermatitis It is not so generally known that mercuriolate and borated vaseline may do exactly the same thing It was our belief, in two instances, that a painful dermatitis developed from the incompatibility of these two drugs It will be noted that in one case, the remedy, borated vaseline, is a very simple one

As a typical illustration of a heavy metal poison which may be occasionally overlooked, we may sight the case of nickel A workman who was an expert at setting type, developed a rash on the backs of his hands, which existed for a long time and did not respond to treatment An examination of his work showed that a saw was used daily to cut through certain metals throwing out a dust of nickel and wood, which settled on the backs of his hands It was perfectly obvious that the man was suffering from a nickel dermatitis

The use of nickel has broadened a great deal, and if it can be proved that the workman is exposed to nickel dust, and it is found that he is suffering from a dermatitis of the hands, it is safe to say that it is the result of the nickel, other causes not being found It is well-known, of course, that the nickel of white gold in the form of wrist watches or

glasses frequently causes a dermatitis of the face or wrist There is, of course, no treatment other than the removal of the cause Some authors feel that psoriasis is in reality, nickel poisoning In this case, the nickel is found in the food

Various salts of chromic acid may also produce a severe dermatitis of the hands They penetrate deeply Where workmen are exposed to fumes of these salts, there should be an adequate exhaust ventilating system If there is not, irritation of the hands will certainly follow Ordinary photographic hypo is a good neutralizing agent in the treatment of burns and subsequent dermatitis The applications of chromium in industry are very diversified, and are much wider than is commonly supposed

Professor Hanzlik of the University of California, has described⁸ the pharmacology of the phenylenediamines They are used as the agents in the manufacture of dyes for furs and pelts, rubber industry, and the photographic industry The diamethyl and the diethyl phenylenediamines as pointed out by Professor Hanzlik, are very irritating to the skin, especially the former The disease usually attacks the hands, and may spread rapidly up the forearm, in exactly the same manner as does phenylhydrazine dermatitis The disease appears promptly on exposure to dust or solution Some individuals are so sensitive that a single exposure will produce a troublesome dermatitis If promptly removed, cure follows within three to fifteen days A very hot, weak solution of acetic acid sometimes gives relief to the intolerable itching Inasmuch as these substances are fat soluble, it is extremely difficult to reach them after they have penetrated the skin It may be occasionally necessary for this reason, to use a strong karyolytic agent to remove the deeply implanted chemical The phenylenediamines, of course, have been notorious in causing dermatitis, more particularly of the neck, when used in dyeing furs They are listed as illustrating how extremely susceptible some individuals may be to the action, while other individuals apparently seem to be immune

One employee suffered from a dermatitis of the hands and forearms which persisted for a long period of time Various remedies

were applied without success. Among other duties, this employee frequently passed from one dark room to another, and in doing so, it was necessary to pull aside a curtain which separated the two rooms. The curtains were dyed green. A patch test was suggested, and a strongly positive reaction showed that something in the curtain was the offending agent, probably the dye. The curtains were changed to another type.

Monomethyl-p-amino-phenol sulphate, known in the photographic field as elon, metol, etc., has had in the past, an unenviable reputation for producing dermatitis. It generally attacks the hands. There is an intense erythema and itching, which may spread up the forearm. Fissures and cracks may develop and of course, secondary infections. Erman, of England, has shown that purification of the elon entirely eliminates this irritating action which appears to be due to the phenyldiamines.

A chemist of very wide experience in handling the substance advises us that if the hands are washed frequently in a weak solution of acetic acid, that this prevents the development of the dermatitis. Washing with soap aggravates the condition.

In spite of our association in the manufacture of this product for a long period of time, we have seen no cases of dermatitis from this chemical, in spite of its bad reputation.

The extreme sensitivity of some individuals to various chemicals, places upon the industrial physician, the question of proper placement in industry. Certainly, the skin on the pre-employment examination is being given more consideration than formerly, and those who have had a bad record of dermatitis of one cause or another should not be placed where there is any hazard.

Experience has shown that extremely toxic substances may be handled with impunity if the proper safety measures are followed. The extent to which safety measures may be carried out, by the adoption of the improved mechanical methods, is one of the characteristics of this century. The recent development in the battery industry illustrates this point. A system of closed ventilation, wherein the fumes, spray or dust is kept within a closed space, is, of course, admirable, from every point of view, and in some instances offers the only hope of preven-

tion. It is surprising, in view of the development of modern safety equipment to find how many processes can be handled in this manner with safety, in which there was formerly a morbidity of the skin.

For some years, we have adopted the practice of clipping from the medical literature, all articles bearing upon the industrial dermatoses. These are pasted on loose leaves in a very large book, measuring nineteen by twenty inches. When a workman presents himself with a dermatitis, a list of all the substances which he uses is matched against a list compiled in our loose leaf book. If the substances used have a bad history, from literature at hand, and text-book description, the simplest way is to test them out on the individual to see if they actually produce a dermatitis in the particular patient at hand.

Unfortunately, most text-books, except those confined to the industrial dermatoses, mention altogether too little about skin reactions of various chemicals. As a matter of fact, the greatest list of offenders are not in the text books at all, and if they are to be found, must be taken from current chemical and medical literature.

In the matter of using protecting creams and lotions, we are of the opinion that they do not satisfy, and we are of the belief that engineering ingenuity can obviate their necessity. Some shop foremen have reported success in using certain of these creams in preventing folliculitis, due to oil. Our experience in their use has been very limited.

The author greatly appreciates the co-operation of his associates, Dr Wm A Sawyer, Medical Director of the Eastman Kodak Company, and Dr Charles Galaher, in the preparation of this paper.

The author has prepared an extensive bibliography on this subject and a copy will be gladly furnished to anyone requesting it.

KODAK PARK

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Discussion

DR. G. M. LEWIS, *New York City*—Dr Slater is to be congratulated on his presentation of a very difficult subject. Hand dermatoses are, for the most part, of eczematous nature and their clinical and histologic characteristics are similar, if not identical, to eczemas and dermatitides in other locations. With industrial dermatoses, the same problems arise as with other eczemas of external origin. The exposed parts of the body are the sites of election, the hands being particularly favored. The covered portions of the body may become secondarily involved. Eczemas of the hands vary in appearance from the types showing a simple erythema with scaling to types exhibiting papules, vesicles, and bullae. Secondary lichenification, traumatization, and infection are common complications. Cure quickly follows (within a week or two) when the irritant or allergin causing the eruption ceases to come in contact with the patient's skin, it may be delayed in cases showing secondary infection.

The chief problem confronting the physician is to establish an accurate diagnosis. In a list of the more common hand dermatoses the following should be placed

- 1 Eczema (dermatitis venenata, endogenous, neurodermatitis, etc),
- 2 Dermatophytid,
- 3 Monilid,
- 4 Bacterid,
- 5 Infectious eczematoid dermatitis,
- 6 Drug eruptions,
- 7 Psoriasis and pustular psoriasis,
- 8 Scabies,
- 9 Dermatitis factitia,
- 10 Dysidrosis (pompholyx, cheilopompholyx)

Some of the rarer dermatoses are also occasionally noted on the hands.

The first step in diagnosis is a careful

history, paying particular attention to the family history regarding allergy, the patient's environment, habits, subjective symptoms (pain, itching, burning), number of attacks, activities during well periods as well as when the disease is present, manner of development of the eruption, the sequence of vents, the response to treatment (kinds)—all possible irritants. The clinical descriptions of the disease should include minute details as to its exact location, character of the disease, presence of complications, as well as possible foci of infections in the teeth, tonsils, sinus tracts, interdigital webs of the feet and the nails. Although the eruption may be confined to only a limited area of skin such as the hand, it is advisable that the patient be examined from head to feet for concomitant lesions.

Special examinations which may be useful in determining the diagnosis of hand dermatosis include the following:

- 1 Microscopic and cultural examination for fungi on hands and feet,
- 2 Skin tests with trichophytin, oidiomycin, and catarrhal vaccine,
- 3 Patch tests with suspected allergins as well as common substances not falling under direct suspicion,
- 4 White blood count,
- 5 An occlusive dressing over part of the eruption (if the eruption improves, the diagnosis of dermatitis venenata or dermatitis factitia may be suspected),
- 6 Histologic examination of the skin may prove requisite in certain instances.

In one hundred patients with eczematous hand lesions, the examination for fungi was positive in twenty-eight instances, sixteen infections being due to trichophyton, and twelve due to monilia. The skin tests tend to corroborate these findings. The white blood count was low except in cases showing pyogenic infection. Histologic examination was of distinct value in separating cases of dermatitis factitia, psoriasis, and pustular psoriasis from the eczemas.

INFECTIONS OF THE HAND

ROBERT F BARBER, M.D., *Brooklyn*

It still must be stated that the best way to treat a disease is to prevent it. More and more this is being done by industry, because it pays. Through the National Safety Council, industry has carefully and systematically considered the best ways in which to reduce accidents. This body is generously supported by contributions from individuals, companies, and corporations for the purpose of improving methods of safety and at the same time of stimulating their widespread usage. In

this way, industrial prophylaxis has reduced accidents and rendered unnecessary the surgeons' measures, which at best are not too good. At hand we have the annual report of The Brooklyn Union Gas Co. for the year 1935. This company employs 4,728 men.

Results of efforts towards the elimination of accidents have been most gratifying. In 1927 there were 754 accidents which resulted in loss of time from employment. In 1934 there were 84. In 1935 there were only 44.

that were serious enough to cause loss of time.

From this example alone one can see that for every accident today there were seventeen just eight years ago

One is often asked the most efficient method of first aid care in order to prevent infection. There is difference of opinion on this answer. Dr. Allen B. Kanavel strongly advocates the use of tincture of iodine, and he speaks with authority. This is the most common treatment, and possibly one of the best. Others equally strongly advocate some variety of the hypochlorites. No rule can be applied to this matter. The surgeon will know what is best in the individual case. All wounds must be rendered socially clean. If dirty ragged edges exist a debridement of the wound must be done. If a tendon is lacerated repair under rigid asepsis must be done at once. Immediate closure may be reasonable in some instances. In others it will be necessary to drain or to use the method of Carrel-Dakin. These considerations are of debatable relative importance. There is one point that all can agree upon. That is that all injuries be treated at once, either at the plant or at the hospital. If this be done there is the least opportunity for the starting of the growth of organisms in the wound. The treatment is instituted before the infection gets under way.

The commonest infectious agents are the staphylococcus and the streptococcus. While the one may produce a picture that often resembles the other, there are noted marked differences. The streptococcus is prone to give rise to diffusely spreading infections. Its limits are poorly defined, there is absent or delayed formation and circumscribing of pus. Ascending lymphangitis is often noted and bacteriemia is not infrequent.

On the other hand, the staphylococcus infections are more commonly well-circumscribed from the start. Pus is produced at once. It may burrow and spread far but it spreads in well-defined limits. Ascending lymphangitis and bacteriemia are less common. Obviously this type lends itself better to operative interference. Fortunately it is the most common.

Rarer infectious agents are the tubercle bacillus, giving rise to the anatomic tubercle or tenosynovitis, the yeasts and

moulds, and anthrax. Although we have seen several examples of each of these rarer infections, for our purposes here they have little more than academic interest.

It is not the intention to fatigue the mind with a long written account of structures concerned in the problem of infection, but it is proper to recall some outstanding features. The subcutaneous connective tissue of the hand varies greatly in thickness, toughness, and texture. The difference is most marked between the dense fat-filled finger pads and the thin movable skin on the dorsum of the hand. In the finger pads dense connective tissue bands extend to the periosteum. The anatomy alone accounts in a manner for the frequency with which a felon (the so-called anterior closed space infection of the finger) gives rise to bone invasion and destruction. On the dorsum of the finger we find the nail with its special structure accounting for the occurrence of paronychia, with rare involvement of the bone. In the midpalm under the deepest tendons is a potential fascial space, the deep palmar space. Here infection appears either arising locally or from extension upwards from a focus in any of the three middle fingers. The thenar space is a potential area for the accumulation of pus. It is located in the deep tissues at the base of the thumb. Here the pus will burrow towards the web of the thumb or the dorsum of the hand just above the web. This type of infection arises most often from the thumb. It may at times come from pus that breaks through from the base of the index finger. Infection in this space is frequent. A similar space occurs on the opposite side of the hand, the hypothenar space. It is smaller and lends itself readily to drainage. It is rarely the seat of infection.

The tendon sheaths are the most obvious routes for the spread of infection. From the finger we find the pus carried into the full extent of any given sheath. With the thumb and the little finger one may see at a glance with what ease extension may travel upwards. In the upper portion of the deep palm the ulna and radial bursae become invaded. Thus in turn carries the pus upwards still, under the annular ligament, and into the forearm. While such extensions are tragic

and threaten permanent disability if not immediate death for the patient, the majority of infections are limited to the fingers and the hand. The tendon sheaths even though filled with pus may be restored to full function following drainage. While this is not the rule at least it should be the goal of our efforts. Milder forms of tenosynovitis subside under conservative treatment, and do not give rise to impairment of tendon function.

Infection in the bones usually occurs by continuity of the inflammatory process. In its invasive march the pus reaches the periosteum through the adjacent areolar tissue. Invasion takes place and all degrees of destruction occur. In the earlier stages the progress of bone invasion is associated with great pain. Another almost constant finding is great local swelling. This is prone to persist until the sequestrum is removed. The joints become invaded by the same method as the bone. In addition they may be involved from invasion from previously infected bone. As a rule permanent changes are produced in the joint resulting in ultimate loss of function. Occasionally the bone will be invaded through the blood stream from some distant focus in a tooth or a tonsil or elsewhere. The course of this type of infection differs in no way from the course in the ordinary osteomyelitis by extension.

The lymphatics are very abundant on the palmar surface of the hand. The rich network of these vessels is a very important factor in the regional mechanism of defense, although the abundance of these vessels is doubtless more for physiological purposes than for anything else. On the dorsum of the hand the network of lymphatics is not so closely woven as on the palm. The lymphatics are on occasion disseminators of any infection. Their distribution both superficially and deep is so wide as to make the possibilities of spread legion, although that spread be at variance with the structural specifications of the anatomists as to fascial spaces, tendon sheaths or planes of extension. Here again, despite the fear of repetition, it may be noted that the streptococcus is prone to spread widely and rapidly by this route. In such types of infection operative procedures are both meddlesome and futile.

The blood vessels give rise to surgical interest because in extending infections the arteries are occasionally the seat of erosion from without. This gives rise to sudden hemorrhage. Packing of the wound or mass ligation on the spot may tide one over for the moment, but this does not suffice. A better and safer course is to ligate the vessel through healthy tissue above the infected area. Kanavel states that the ulna artery is the chief offender in his experience and quotes two cases. My experience has been identical except that it was the radial artery. The veins often become the seat of infection from without and thrombophlebitis follows. This rarely extends. Venous complications seem to have little surgical importance.

Treatment cannot be arbitrarily outlined. If such were done and followed the next patient would probably prove to be an exception and the treatment ill-advised. For this reason it seems best to suggest that in the early stages of an infection there is a preoperative period when the pathological destiny is obscure and the surgical procedures are not obvious. At this stage the first requisite is rest to the part. The second is continuous moist heat by means of abundant dressings moistened with saline and enclosing a hot water bottle. In general the greatest swelling is on the dorsum of the hand but the incisions are made on the palmar surface.

When should one proceed to incise and drain? A persistent point of tenderness in an indurated area means pus in the fascial space beneath. A line of tenderness over a tendon sheath with great pain on attempted flexion of the finger means pus in the sheath. One should proceed to operate with nothing more obvious than this. The drainage may be the one thing that will limit the spread of the infection. The lines of incision are shown well in the cuts from Kanavel's "Infections of the Hand" (In the presentation, the author showed lantern slides—*Editor*). We follow these lines except for the thenar space infections where we prefer a curved incision around the base of the thumb, opening the thenar space and the long flexor sheath if necessary, and then extending the incision through the web to the dorsum of the hand. In our experi-

ence this incision has seemed to give a good ultimate function for the thumb. The x-ray is used routinely for bone detail. The probe is of great help in picking up bone without periosteum at the bottom of a sinus tract. An anesthetic is given as a matter of necessity in the average case because the pain of operative procedures is unbearable. Nitrous oxide is our choice, but any light anesthetic suffices.

The use of drains is advisable because the tough tissues of the hand tend to fall together after incision. In order that a drain may not act as a stopper of the opening, it is best to use rubber tissue or rubber tubing. There is no objection to the use of vaseline gauze. All during this stage of treatment moist heat is continued. After a few days it is better to change to dry heat through the agency of a lamp. Bier's hyperemic treatment is not used by us. We were never convinced of its value either in practice or theory. One might call the process of inflammation and repair a miracle. We use learned technical expressions to record what goes on, but how little is known of why it goes on. To interfere with the rapidity with which blood moves in and out of a given area which is the seat of a vital conflict may be anything but beneficial. Simple surgical procedures are used in the final stages of healing.

Physical therapy is a most important aid in the restoration to usefulness of the infected hand. It should be employed in every case where there is limitation of function. To neglect to use this form of therapy might well be regarded as a mild form of malpractice. The use of anesthesia to break adhesions and increase range of motion will occasionally be found necessary.

The advantages of the proper surgical handling of infections of the hand are best seen in the results, both functional and cosmetic. The scars of surgical intervention fade with time almost without distortion of the soft parts. The scars are not at pressure points and therefore are not painful. The lines of incision are not through important anatomical structures and the result is the best working hand obtainable. When there is loss of digits, that loss becomes both an individual and an industrial tragedy. In this state the loss for a working man is scheduled by weeks wages.

	<i>Weeks</i>
For loss of thumb or its use	75
First or index finger	46
Second finger	30
Third finger	25
Fourth or little finger	15
Entire hand	244

How meager this is to compensate for the resultant loss of income for a lifetime. There may be no occupation, or at best an unattractive type of employment at much lower wage scale.

Summary

1 Industrial and medical prophylaxis is the best treatment for the infections of the hand.

2 The form that the inflammation takes is often determined by the types of bacteria causing the infection.

3 Gross anatomical knowledge is fundamentally essential for proper treatment.

4 Surgical therapy should be definite and accurate, and should include physical therapy.

5 The state and the individual pay for the bad end results, but mostly the individual.

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Discussion

DR. P. A. WADE, *New York City*—Dr Barber is to be congratulated upon his very interesting and instructive paper. I have little to add to what he has already said.

However, there are some points I would like to emphasize. *First*, infections of the hand, except for the most minor procedures, should be done in an operating room with adequate assistance and with general anesthesia. Although hand infections have of late years been elevated to their proper position in the field of surgery, I believe

there are still too many incisions made in clinics and offices. One fault, perhaps is the attitude of the patient who often considers infections of the hand and fingers as unimportant conditions. It is our duty to educate the public so that we will not meet the resistance of the patient in insisting upon admission to the hospital and proper operation.

Second, tendon sheath infections should be operated upon under general anesthesia with the use of a tourniquet, preferably an

Esmarch bandage, so that proper anatomical dissection may be carried out to insure proper drainage with the least possible amount of trauma to involved tissues

Third, local anesthesia in operations on the fingers should be used with great caution, and I believe that the practice of using, as a local anesthesia, the usual preparation of novocain with adrenalin is distinctly harmful and should never be used in digital nerve block anesthesia on fingers. Garlock reported four cases of gangrene of the finger following digital nerve block anesthesia. In all of these cases a rubber band tourniquet was used in conjunction with novocain. He did not report whether or not adrenalin was used in conjunction with the novocain. Nowadays, the drug companies make a practice of dispensing novocain with adrenalin unless the doctor insists upon novocain without adrenalin. In all probability the novocain in these cases contained adrenalin. I have recently seen

a case of gangrene of the finger following a minor procedure in which novocain with adrenalin was used as a local anesthesia. In this case no tourniquet was used, and it was undoubtedly the anesthetic solution which caused the circulatory disturbance. Undoubtedly most cases may be anesthetized with this solution without adverse results, but in the rare case there may be some susceptibility to the novocain, and especially in fingers in which the circulation has already been damaged by infection. It is more preferable to use a general anesthesia than to subject the tissues of the finger to further damage by the local anesthesia.

Fourth, I would like to emphasize one more point. A most important part in the treatment of hand infections is the post-operative care. Wet dressings, hand soaks, and the changing of dressings should be done in the strictest aseptic technic, for some of the difficulties arising in hand infections arise from secondary infections.

MANAGEMENT OF INJURIES OF THE TENDONS AND NERVES OF THE HAND

JOHN H GARLOCK, M D, F A C S, *New York City*

Many injuries of the hand which lacerate the skin involve the tendons also. Every laceration or incised wound of the hand calls for a careful examination of active flexion and extension of all the finger joints. It is certain that, if this were done consistently and operation for the repair of a divided tendon were performed as an emergency soon after the receipt of the injury, there would be fewer hand disabilities in a class of patients who depend upon proper hand function for a livelihood.

It is to be remembered that the flexor tendons possess a most delicate and unusually efficient gliding mechanism, the surrounding tendon sheath, and the vaginal ligaments over the front of the proximal and middle phalanges and the heads of the metacarpal bones. The slightest injury to the endothelial lining of the tendons and sheaths produces a marked reaction. Adhesions form quickly and bind tendon to sheath. The intensity of this reaction is directly dependent upon the extent of the trauma. Therefore, in all operative work upon these delicate tissues, the technic must be as ideally atraumatic as possible. One must think in terms of microscopic injury. This attitude to-

ward surgery of the flexor tendons may very well be applied to other problems in hand surgery. It is an ideal for which every surgeon who attempts repair of tendons or reconstruction work in the hand must strive.

In the first place, every possibility for tremor must be eliminated. The patient's hand should be fixed to the operating table in such a way as to prevent the slightest movement. The surgeon himself should be comfortably seated with his forearms braced against the table over which he is working. Asepsis in the operating room and amongst the nurses and assistants must be of the most rigid sort. To diminish the trauma incident to the operation itself, a bloodless field is indicated. This can be obtained by the proper application of an Esmarch bandage, which is of inestimable value in hand surgery. If correctly applied, one need have little fear of untoward sequelae, such as nerve palsies. The hand and forearm are first wrapped in a single layer of sterile towel. The extremity is then held elevated for a few minutes. The sterilized Esmarch bandage is started at the finger tips and rolled down the forearm, each turn being pulled as tightly as the rubber

will permit, and overlapping the turn of the bandage that preceded it. In working on the hand, one need go no further with the bandage than the upper third of the forearm. At the point where it terminates, the towelling should be of four or five thicknesses to avoid the direct pressure of the bandage on the skin. Should it be found necessary to extend the bandage to the upper arm, it is wise to have the underlying towel of six or eight thicknesses. The latter precaution is taken to avoid injury of the musculospiral nerve which lies nearer the skin here than do the nerves in the upper part of the forearm. The Esmarch bandage may either be left in this position until the close of the operation, or a blood pressure cuff may be applied to the arm above the

termination of the Esmarch which may be removed after the blood pressure apparatus has been pumped up until it registers about two hundred and fifty mm of mercury.

The surgeon should try to complete the operation within the period of one to one and a half hours. If he feels that the operation will be a long one, the additional use of the blood pressure cuff is indicated. During the course of a prolonged operation, the pressure in the apparatus may be diminished for a few seconds and then raised to its previous reading. This may be done every fifteen

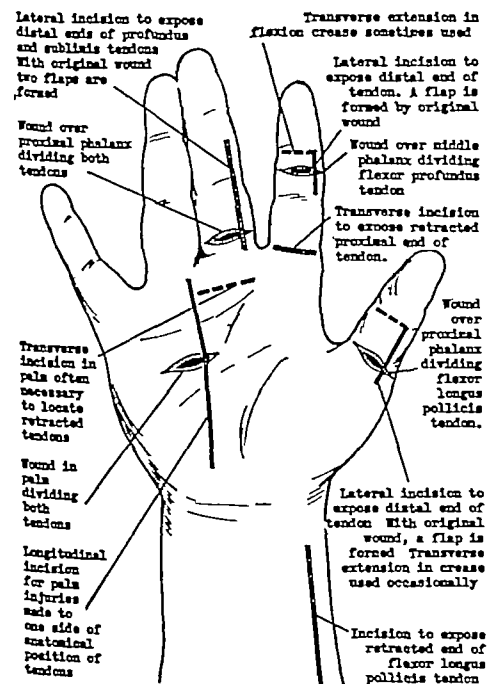


Fig 1 Drawing of hand to indicate the most common sites of wounds in the fingers and palm, resulting in injury to the flexor tendons, an operative approach in each instance. The transverse incision in the distal flexion creases is sometimes used to obtain complete exposure. This, however, is infrequently necessary. The original wound in the skin and subcutaneous tissues must be completely debrided before closure. Digital incisions must avoid the anterior surface of the finger and not cross flexion creases at right angles. Great care is to be exerted to maintain the integrity of the vaginal ligaments of the tendon sheaths.

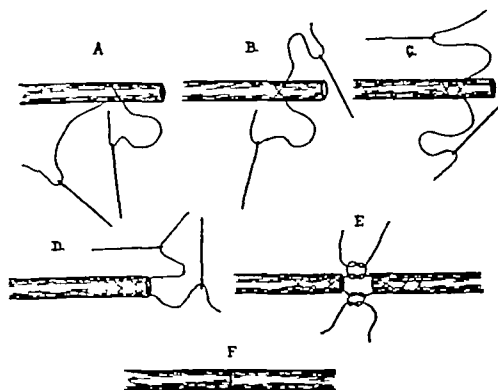


Fig 2 (a, b, c, d, e, and f) Method used for repair of divided tendons. At A, the suture material is passed transversely through the tendon about $\frac{1}{2}$ inch from its extremity. Both ends of suture which consists of fine silk, are threaded on fine straight needles. One of the needles is made to pass obliquely through tendon, coming out on opposite side. The other needle is passed through in a similar manner, coming out at side opposite point of exit of first needle. B This leaves a minimum of suture material on surface of tendon. The needles are then passed again obliquely through tendon and made to come out at opposite sides, as shown at C. Needles are then passed again through tendon and emerge at tendon-end near periphery, as shown in D. It will be noted that a minimum amount of suture material lies exposed on surface of tendon. The same procedure is carried out in the other end of the divided tendon. When knots are tied uniting the proximal and distal extremities of tendon, it will be seen that they lie buried between the tendon ends, E. They should be tied as to cause "buckling" of tendon at site of repair, F. Before knots are tied, the slack of suture in tendons must be "taken up" by pulling on ends of suture. Before the needles are made to emerge at end of tendon, a fresh accurate transverse extremity is produced by excising with a razor blade the end which has been held in an Allis clamp. Thus all traumatized tissue is excised before repair is completed.

Esmarch bandage, so that proper anatomical dissection may be carried out to insure proper drainage with the least possible amount of trauma to involved tissues.

Third, local anesthesia in operations on the fingers should be used with great caution, and I believe that the practice of using, as a local anesthesia, the usual preparation of novocain with adrenalin is distinctly harmful and should never be used in digital nerve block anesthesia on fingers. Garlock reported four cases of gangrene of the finger following digital nerve block anesthesia. In all of these cases a rubber band tourniquet was used in conjunction with novocain. He did not report whether or not adrenalin was used in conjunction with the novocain. Nowadays, the drug companies make a practice of dispensing novocain with adrenalin unless the doctor insists upon novocain without adrenalin. In all probability the novocain in these cases contained adrenalin. I have recently seen

a case of gangrene of the finger following a minor procedure in which novocain with adrenalin was used as a local anesthesia. In this case no tourniquet was used, and it was undoubtedly the anesthetic solution which caused the circulatory disturbance. Undoubtedly most cases may be anesthetized with this solution without adverse results, but in the rare case there may be some susceptibility to the novocain, and especially in fingers in which the circulation has already been damaged by infection. It is more preferable to use a general anesthesia than to subject the tissues of the finger to further damage by the local anesthesia.

Fourth, I would like to emphasize one more point. A most important part in the treatment of hand infections is the post-operative care. Wet dressings, hand soaks, and the changing of dressings should be done in the strictest aseptic technic, for some of the difficulties arising in hand infections arise from secondary infections.

MANAGEMENT OF INJURIES OF THE TENDONS AND NERVES OF THE HAND

JOHN H. GARLOCK, M.D., F.A.C.S., *New York City*

Many injuries of the hand which lacerate the skin involve the tendons also. Every laceration or incised wound of the hand calls for a careful examination of active flexion and extension of all the finger joints. It is certain that, if this were done consistently and operation for the repair of a divided tendon were performed as an emergency soon after the receipt of the injury, there would be fewer hand disabilities in a class of patients who depend upon proper hand function for a livelihood.

It is to be remembered that the flexor tendons possess a most delicate and unusually efficient gliding mechanism, the surrounding tendon sheath, and the vaginal ligaments over the front of the proximal and middle phalanges and the heads of the metacarpal bones. The slightest injury to the endothelial lining of the tendons and sheaths produces a marked reaction. Adhesions form quickly and bind tendon to sheath. The intensity of this reaction is directly dependent upon the extent of the trauma. Therefore, in all operative work upon these delicate tissues, the technic must be as ideally atraumatic as possible. One must think in terms of microscopic injury. This attitude to-

ward surgery of the flexor tendons may very well be applied to other problems in hand surgery. It is an ideal for which every surgeon who attempts repair of tendons or reconstruction work in the hand must strive.

In the first place, every possibility for tremor must be eliminated. The patient's hand should be fixed to the operating table in such a way as to prevent the slightest movement. The surgeon himself should be comfortably seated with his forearms braced against the table over which he is working. Asepsis in the operating room and amongst the nurses and assistants must be of the most rigid sort. To diminish the trauma incident to the operation itself, a bloodless field is indicated. This can be obtained by the proper application of an Esmarch bandage, which is of inestimable value in hand surgery. If correctly applied, one need have little fear of untoward sequelae, such as nerve palsies. The hand and forearm are first wrapped in a single layer of sterile towel. The extremity is then held elevated for a few minutes. The sterilized Esmarch bandage is started at the finger tips and rolled down the forearm, each turn being pulled as tightly as the rubber

ing debris and soap-suds into the wound. Following drying of the parts with sterile towels, the skin is washed off with benzine followed by ether. The extremity up to the elbow is then painted with three and a half per cent iodine, care being exerted to prevent the entrance of any iodine into the tendon sheath. I wish to emphasize the importance of this method of skin sterilization, which, in my opinion, is the correct one because I recently heard a surgeon, in reporting the end-results of a large series of hand injuries, make the statement that the tendon sheath should be liberally doused with tincture of iodine. He felt that because of this procedure alone, no infections had developed. Yet in spite of this, the end-results in a large proportion of the cases were hardly what one would strive for. It is a well-known fact that iodine, when applied to endothelial-lined surfaces, produces a violent

reaction. This is especially noteworthy in flexor tendon sheaths.

When the wound is found before operation to be ragged and dirty, obviously grossly contaminated, and the surrounding skin is covered with grime and dried blood, and there has been considerable crushing of the tissues, in addition to laceration, I feel that the repair of the tendon should be deferred until the wound has healed, the immediate interference consisting solely in a general cleansing and debridement. Two or three weeks later, one may safely undertake the repair of the tendon in a clean field. In the presence of other wounds within the initial six hours following the injury, immediate tenorrhaphy can be done with safety after the skin cleansing already described.

The site of incision for exposure of the ends of the divided tendon or tendons will depend upon the situation of the original wound. It is important to remember that the incision should always be

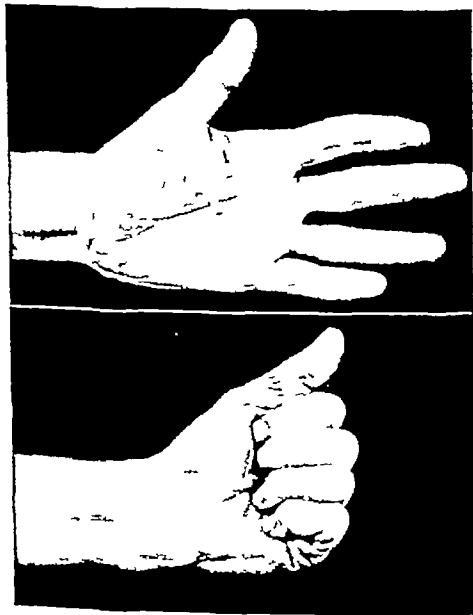


Fig 5 (a and b) Illustrating two problems in hand surgery. Patient received a lacerated wound over proximal digital flexion crease, caused by a buzz-saw. Finger was almost amputated. At operation both flexor tendons were found divided as were also both digital nerves of index finger. Proximal phalanx was cut almost in two. Operation consisted in thorough debridement and repair of all divided structures including digital nerves. This operation was performed in 1923. Photographs at end of two years indicate return of complete function. There is no interference of sensation in the finger, indicating regeneration of digital nerves.

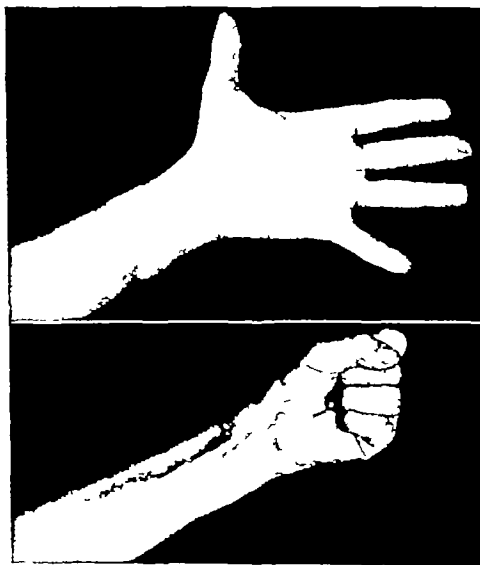


Fig 6 (a and b) Laceration across lower forearm produced by broken automobile windshield. All structures in the anterior compartment of forearm were divided. Debridement and primary suture performed within two hours of accident. Active motion was started on sixth postoperative day. A posterior metal splint maintained wrist in partial flexion for twenty-two days. Wound healed by primary union. Photographs were taken at the end of one year and indicate return of complete function.



Fig 3 (a and b) Illustrating division of flexor profundus tendon of right middle finger cm proximal to its insertion. Because of extensive skin soiling, operation was deferred until thirteen days after injury, when wound was completely healed. The technic as described in text was followed. Active motion was instituted on seventh postoperative day. Photographs indicate result at end of one year.

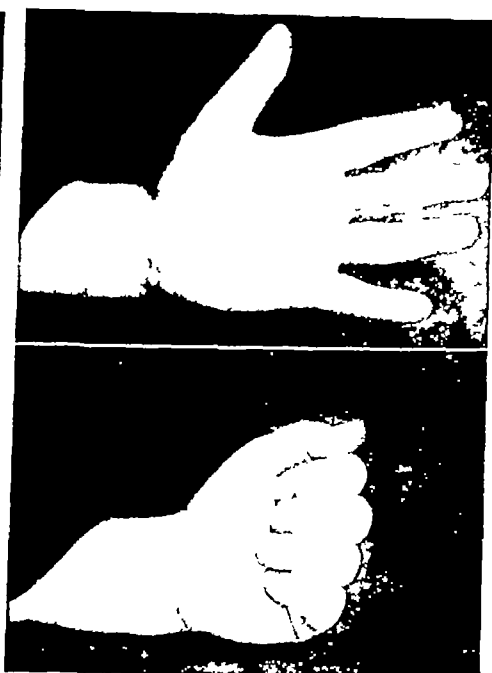


Fig 4. (a and b) Division of both flexor tendons of left middle finger in palm at region of outer end of distal palmar flexion crease. Operation was performed six weeks after injury. It will be noted that incision is placed to one side of anatomical location of the tendons. Active motion was instituted on eighth postoperative day. Photographs were taken at end of one year.

or twenty minutes. For an ordinary primary tenorrhaphy, this is rarely indicated because the operation usually consumes less than an hour. I have never seen a musculospiral paralysis following the use of an Esmarch bandage as described.

In the performance of the operation, all tissues must be handled with as great gentleness and delicacy as possible. One must always maintain a wholesome respect for tissues and keep one's mind on their postoperative reaction. This is applicable to skin as well as subcutaneous tissues, muscles, tendons, and nerves. Instruments should be the sharpest obtainable and small in size. The surgeon must avoid heavy catgut, large knots, dead spaces, tension of sutures, mass ligation, too many stitches, foreign bodies in fat, closure with incomplete hemostasis, the use of very hot sponges, and drying of the tissues due to prolonged exposure. In

ligating bleeding points, the finest catgut should be used. The reduction of the time of operation to a minimum may be obtained by good teamwork, conservation of movements, the elimination of unnecessary puttering, and an adequate exposure of the field of operation. The foregoing is a prime requisite if one is to expect satisfactory results in the surgery of the tendons and nerves of the hand.

Flexor tendons. After the diagnosis of a divided flexor tendon is made, operation for its repair should soon follow. In the vast majority of cases this may safely be done provided that, at operation, the original wound is thoroughly debrided. A general anesthetic should always be administered. The skin of the hand and forearm must be carefully prepared before repair is attempted. This entails first a careful scrubbing with sterile soap and brush, followed by irrigation with saline. Care should be exerted to prevent wash-

tendon In addition, it permits early active motion The most efficient suture material for this purpose is Turner's patent ligature silk of about number three or four size Very fine straight needles are used Before the emergence of the silk at the end of the tendon which has been held grasped by an Allis clamp, the contused part held by the clamp is excised with a sharp razor blade so as to give a fresh transverse nontraumatized end When the corresponding ends of the silk in the two tendons are tied, it will be seen that the knots lie between the tendon ends, and that there is accurate apposition This method of suture accomplishes two things It produces a firm mechanical joining of the tendon ends and leaves the smallest amount of suture material on the surface of the tendons, thus reducing to a minimum the possibility of adhesions Following the repair of the tendon, the small wounds in the tendon sheath should be closed with interrupted sutures of fine catgut. The Esmarch bandage is then removed and all bleeding points carefully ligated The wound must be thoroughly dry before the skin is closed with interrupted sutures of fine chromic catgut.

Following the application of dressings, it has been my custom to apply a light plaster glove with the repaired finger and wrist in moderate flexion From the experimental work already alluded to, it was found that active motion can safely be started on about the fifth or sixth postoperative day Following this initial five day period, the splint is removed daily and the patient is encouraged to actively flex and extend the finger *within the limits of pain* On about the ninth or tenth day, the plaster glove may be discarded, and a dorsal metal splint applied so as to keep the wrist in flexion Finger immobilization after this date seems unnecessary because, by holding the wrist in flexion, one diminishes the intensity of contraction of the flexor muscles This dorsal splint should be worn for a period of about twenty-one to twenty-five days Our experimental work indicates that union of a repaired tendon is firm enough at this date to warrant discarding the splint. After this period, many other remedies may be utilized, such as frequent strong galvanic stimulation of the muscles to produce contraction, thus help-

ing to break adhesions, properly administered baking and massage, hot soaks, whirlpool baths, re-education exercises, etc.

While I do not question the value of these procedures and constantly utilize them, I feel that more can be accomplished by carefully controlled and personally encouraged daily active motion in the initial six or eight weeks of treatment The time element must also be considered as having a direct bearing on the eventual outcome inasmuch as an optimum result may not be obtained until a period of four to six or more months has elapsed

A not uncommon injury is a laceration across the front of the wrist with division of most or all of the structures in this situation Such an injury calls for a careful examination of the function of the small muscles of the hand, and skin sensation of the extremity distal to the point of trauma in order to determine the presence or absence of injury to either the median or ulnar nerves or both Not infrequently, it will be found that both these structures as well as all the flexor tendons have been divided by the trauma I have seen a number of cases with injuries in this situation produced by a sharp-pointed object resulting in isolated injury of either the median or ulnar nerves without involvement of the tendons It is surprising that so many lacerations in this situation are treated by suture of the skin alone without any attempt to determine the presence or absence of tendon or nerve injury

The treatment of such an injury calls for immediate operation by a competent surgeon. A thorough knowledge of the anatomy of the structures in this region is necessary for the performance of an intelligent operation which is bound to be a tedious one Following the preparation of the skin, and the application of an Esmarch bandage as already described, the wound is completely debrided. A longitudinal incision proximal and distal to the original wound will be found necessary to locate the retracted ends of the divided structures Repair of the tendons which must be accurately fitted together follows the same technic as already described A divided median or ulnar nerve may be repaired by the insertion of five or six sutures of fine silk placed only

made on the lateral aspect of the finger. Making a median longitudinal incision is a pernicious practice because the subsequent healing is bound to produce a flexion contracture. In the palm, the incision is placed lateral to the anatomical position of the tendon to be repaired. If the flexor profundus tendon has been divided at about the center of the middle phalanx, its proximal end will retract to about the region of the proximal digital flexion crease, being prevented from retracting further by the vincula tendineae

this is done, the chances for development of a flexion contracture are greatly enhanced. Very often, because of the attachment of the vincula tendineae, it will be found that the proximal ends of the divided tendons are very close to the original wound. Should it be found that they have retracted, a separate transverse incision may be made in the palm. Every effort should be made to preserve the integrity of the vincula tendineae because it is through these structures that the tendons derive most of their blood supply.

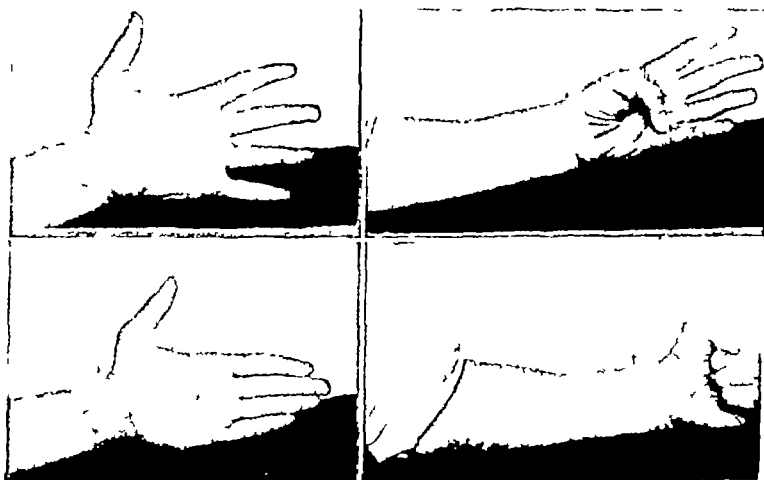


Fig 7 (a, b, c, and d) Case illustrating the early return of finger mobility after division of all the structures at the front of wrist. A complete debridement and repair was performed two hours after injury. There has been a complete regeneration of both ulnar and median nerves, as indicated in the photographs. Normal fullness of palm, abduction, and adduction of the fingers in the extended position, and opposition of the thumb, should be particularly noted.

Instead of extending the lateral incision down to this point, a transverse incision may be made in this crease, and through a small transverse opening in the tendon sheath, the retracted end may be isolated and threaded through the remainder of the sheath up to the site of division of the tendon after the suture has been inserted. By this maneuver, one diminishes the operative trauma and also preserves the vaginal ligaments of the tendon sheath. If the original wound is located over the front of the proximal phalanx, one or both of the flexor tendons may be divided. The lateral incision is here also used, but its proximal end should not extend beyond the proximal digital flexion crease, because it has been found that, if

When the original wound is located over the proximal phalanx of the thumb, it will be found that the proximal end of the flexor longus pollicis tendon is retracted very often to a point opposite the wrist joint. A separate side incision is necessary here for the exposure of this part of the tendon which may then be threaded through the sheath after the silk suture has been placed in its end, and joined to the distal end of the tendon.

In the actual repair of a divided tendon, I am thoroughly convinced that silk should be used. Experimental work which was undertaken along these lines some years ago, indicated that silk causes the least reaction and remains as an innocuous foreign body in the substance of the

motor branch of the ulnar. The remaining branches of these two nerves are sensory in function, but are just as important.

To determine the presence or absence of nerve injury, it is imperative that skin sensation distal to the injury be tested in every instance. This applies just as much to finger injuries with severance of the digital nerves as to wounds in the palm and at the wrist where the main nerves may be involved. Once loss of skin sensation is evident on physical examination, the repair of the divided nerve is indicated. This should be done at the same time that the laceration or divided tendon is repaired.

The surgical repair of nerves in the hand is not a particularly difficult operation. The results in my experience have been fairly uniformly satisfactory. The unsatisfactory end-results that I have seen have been in cases of injury of the ulnar nerve at or above the wrist. The reasons for this are not clear, but it appears that other surgeons have had the same experience. The end-results following suture of divided digital nerves have been unusually brilliant. This is probably due to the fact that these nerves are purely sensory and do not contain mixed fibers. Bunnell, of San Francisco, in an excellent article, was the first to report a series of such cases with practically uniformly successful results. Observation of such cases indicates that the period of regeneration is shorter, the nearer one approaches the tip of the finger, and is longer in cases where the injury is more proximally located. The average period of regeneration of a divided median or ulnar nerve at the wrist is about thirteen or fourteen months. Where a digital nerve has been divided at about the middle phalanx, the average period for regeneration is about one and a half months.

In the actual repair of a divided nerve, the same atraumatic technic already described should be followed. To approximate the divided ends, the finest silk should be used. I have made use of the fine needles and silk sold on the market for suturing blood vessels. Five or six sutures are placed in the perineural tissues in such a way that, when the knots are tied there will be an accurate approximation of the ends of the divided nerves.

Under no circumstances should the suture material enter the substance of the nerve. To permit repair, the involved parts should be put in a position of relaxation with flexion of the various joints. Depending upon which nerve has been repaired, this position of flexion should be maintained for a period of three to five weeks. Electrical stimulation of the muscles supplied by the divided nerve is an important factor in postoperative therapy.

Lacerations. I wish to emphasize the subject of lacerations of the hand solely to warn against the common practice of indiscriminate suturing. This applies especially to wounds on the flexor surface. If, however, the laceration receives the treatment already referred to—careful skin preparation and wound debridement soon after receipt of the injury—the situation is then different, and the wound may be safely sutured. This, however, usually requires an anesthetic and may not always be feasible. In the absence of such preliminary treatment, it is safer to be content with as thorough a cleansing as is possible under the circumstances, proper iodization of the wound and surround-

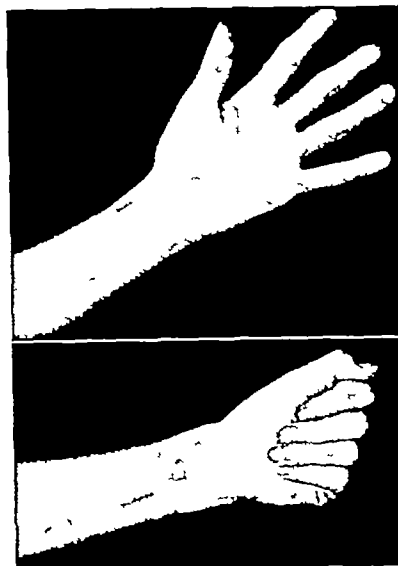


Fig 9 (a and b) Final result of case shown in Fig 8. Scars over anterior aspects of the middle and ring fingers were excised and defects covered with full thickness skin grafts taken from anterior aspect of the same forearm. The grafts "took" completely and the photographs indicate result six months later.



Fig 8 (a and b) This illustrates proper treatment for lacerated wound over front of fingers exposing flexor tendons. This patient's hand was caught in a dough mixing machine. The trauma was of the tearing and compressing type. Extensive irregularly-shaped lacerated wounds were found over front of index, middle, and ring fingers, exposing flexor tendons. After careful skin preparation, wounds were completely debrided and sutured so as to cover exposed tendons and, at the same time, avoiding undue tension. Active motion was instituted immediately. The photographs were taken on sixth postoperative day, and indicate the amount of active flexion on that date.

in the perineural tissues and without disturbing the natural position of the two segments of the nerve by rotation of either one. On more than one occasion, I have seen the proximal end of a divided nerve sutured to the distal end of a tendon or vice versa. Following complete hemostasis, the wound may be sutured without drainage. Postoperative treatment consists in placing the wrist and fingers in flexion and instituting active motion on about the fifth or sixth postoperative day. Flexion of the wrist should be maintained for a period of about three or four weeks. As soon as possible, galvanic and faradic stimulation of the muscles supplied by the divided nerve should be resorted to, in order to lessen the atrophy that takes place. Complete regeneration of a divided nerve in this situation after the operative technic as described may not be evident before the expiration of twelve to twenty-four months.

Extensor tendons Injuries on the dorsum of the hand and fingers that involve division of the extensor tendons offer a much better prognosis as to return of function than those on the flexor aspect because of the absence of tendon sheaths over the major portion of this aspect of the hand. The diagnosis is simple and the treatment evident. When, at operation, the fascia extending between the various tendons is found divided, repair of this structure should also be undertaken because of the added strength it gives the suture line in the tendon itself. A wound situated in the region of the posterior annular ligament divides the extensor tendon at the location of its tendon sheath. However, should adhesions form between the extensor tendon and its sheath at this point, the limitation of function will not be proportionately as great as when adhesions form between the flexor tendons and their sheaths. In my experience, the surgery of extensor tendons following injuries has given practically uniformly good results.

Nerves of the Hand

Proper hand function is dependent upon adequate sensation and finger mobility. Complete sensation is directly concerned with nerve integrity and motion is dependent upon both muscle and tendon function as well as complete nerve distribution. The one is as important as the other. The degree of disability that a divided nerve entails depends upon which nerve is involved and at what level the point of division has occurred. Thus, severance of the median nerve at or above the wrist produces anesthesia in the three digits most often used. In addition to skin anesthesia, joint sense is disturbed. Trophic changes appear and the patient often burns the involved fingers without knowing it. There is also a loss of power of opposition of the thumb to the fingers. Severance of the ulnar nerve at or above the wrist produces anesthesia in the area supplied by this nerve and results in a claw-hand, with deficient thumb function and loss of the fine movements of the fingers. From the standpoint of hand function, then, it will be seen that the two most important nerves in the hand proper are the thenar motor branch of the median, and the

FRACTURES OF THE BONES OF THE HAND

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It is a matter of importance to realize that in industrial surgery today the disability time is frequently as important as the end result obtained. Fractures of the bones of the hands are among the most disabling of industrial injuries both as regards the temporary disability time and the residual permanent disability award. The reason for this lies in the delicate mechanism involved in movements of the hands and fingers and the correspondingly delicate soft part anatomy making it possible. The existence of the fracture frequently blinds us to the fact that the common causes of disability are not bony deformity and nonunion, but disturbance of the nicely and finely adjusted mechanism of tendon, joint capsule, and joint synovial pouches which normally make possible the beautiful mechanical efficiency of the hand.

Before discussing these disabling soft part changes secondary to fracture in the hand, let us briefly review the anatomy and mechanism of joint and tendon action. The tendons on the front of the hand are supplied with sheaths. Those on the back of the hand are not. In either instance, they do not lie loose in a cavity through which they slide. The tendon in its sheath is joined to the latter by a continuous broad mesotenon of areolar tissue which serves to transmit nutrition. The tendon unprotected by a sheath is joined to the underlying and surrounding tissues by a similar areolar tissue paratenon serving the same purpose. In order that tendons may move back and forth freely, as they must for adequate use of the hand and fingers, areolar tissue connections of the tendon must remain loose, delicate, elastic, and flexible. Infiltrate them with hemorrhage, or the exudation which accompanies the inflammatory reaction of injury, and allow that infiltration to become organized and you have

thickened, gross, inelastic and relatively inflexible connection of tendon to surrounding structure, relative fixation or limitation of range of tendon motion, and stiff fingers, even though bone and joint be normal. This limitation is temporary when due to infiltration by hemorrhage and exudate. It becomes permanent when hemorrhage and exudate become organized into tissue unless the thickened and inelastic new tissue can be stretched and rendered elastic—often a long slow process and often an impossibility. Even without pathology in the meso- or paratenon, if the tendon is kept immobilized the same loss of elasticity and contracture of these areolar bands occurs as in the joint capsule of an immobilized joint, with the same resultant loss of flexibility which has to be restored by stretching and exercise. Here then is, in contemplation of this anatomy and this pathology, our first indication for principles of therapy in hand fractures—get rid of hemorrhage and exudation about tendons and tendon sheaths before it organizes, and keep the tendons from fixation in one position for any considerable period of time—and this doesn't mean months—it means weeks or even days in many instances.

The second of the mechanisms, disturbance of which entails serious functional loss, is that of the joints of the fingers (Fig 1). Study of the diagram with its explanatory note will give an idea of the beauty of the mechanics involved. Obliterate the synovial pouches even partially, thicken the delicate and thin capsule merely a little, pucker or distort the glenoid ligament merely a bit, and you have limited motion and stiffness, even though the tendon mechanism be normal. Where the joint capsule is actually adjacent to or involved in the fracture line the normal healing process *in itself* may produce sufficient

ing skin, and the application of one or two strips of sterile adhesive so placed as to approximate the wound edges. In the fingers, these strips should never be applied to completely encircle a digit.

Any extensive laceration calls for an immediate operation consisting of a thorough cleansing and a complete debridement. Very frequently, one sees lacerated wounds over the front of the fingers which have been produced by a crushing force. They are usually irregularly-shaped and often extend down to the tendon sheath, exposing the flexor tendons. The great danger in these cases is

the development of a tendon sheath infection. It is felt that the incidence of this complication may be reduced to a minimum by careful cleansing of the wound and surrounding skin and a painstaking excision of the edges of the laceration. As many sutures should be inserted as are necessary to cover over the exposed tendons. Their number should be the minimum in order to avoid undue tension. I believe that tension of tissues is a great factor in the development of infections following the operation of debridement and suture for compound injuries.

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Discussion

DR. MATHER CLEVELAND, *New York City*—I congratulate Dr. Garlock on his terse, lucid presentation of facts of tendon repair in the hand and fingers. I can find nothing to disagree with and merely wish to emphasize certain of his points.

To do nice tendon repair a bloodless field is absolutely necessary, and I have found a blood pressure cuff offers the best means of securing this hemostasis. If the operation is lengthy, I release the tourniquet at thirty-five-forty minute intervals.

The preparation of the skin is of great importance, and I have felt that the patient's hand should be as thoroughly scrubbed, under anesthesia if necessary, as if he were going to perform the operation. Dr. Garlock has emphasized the importance of proper skin incisions which do not cross digital flexion creases in the midline.

The use of silk for suture material is important because it has been found by microscopic section to cause less trauma to tissues and by its tensile strength it allows early active motion which is essential for the return of function.

My experience coincides with that of Dr. Garlock in that the regeneration of the motor branches of the ulnar nerve when it is severed proximal to the volar carpal ligament is very problematical.

In my series of cases, seventy-two per cent of the incised wounds of the hand and fingers, involving tendons, are on the flexor surface, while twenty-eight per cent are on the dorsal surface. This is because the hand, in use or in defense, is extended with the palm and flexor surface presented toward the machine, knife, broken glass, etc. in most instances. This also holds true for the penetrating injuries which cause infections of the fingers, tendon sheaths, and palmar spaces.

Good results in hand and finger tendon

surgery are only obtained by meticulous attention to detail. Dr. Garlock may have made it sound too easy. I have been able to get perfect results from anatomic, functional, and economic standpoints in a little over fifty-five per cent of the patients upon whom I have operated, thirty-six per cent had a useful range of motion and a hand which did not incapacitate them. The remaining two cases, or nine per cent, were failures, one from infection and the other from failure of the motor branch of the ulnar nerve to regenerate even after a second suture was performed.

The healing in my rather small series was clean in sixty per cent, while forty per cent showed some evidence of infection. This infection was of minor significance for the most part, as four of the cases rated as infected had perfect end-results. I realize that danger of infection has caused some surgeons to advocate deferring tendon repair until the wounds have healed. The difficulties of secondary suture are so great that I feel that after a careful cleaning of the hand primary repair should be done.

The time elapsing between the injury and the tendon repair is important. The longer this interval is, the greater is the opportunity for retraction of tendon ends and for infection. In this series the repair followed the injury as follows:

	Cases
Under 2 hours	8*
2 — 12 hours	5
12 — 24 hours	2
24 hours to 4 months	7

* 7 had perfect results

I have started motion in these flexor tendon cases usually within twenty-four hours and have used a rubber band, attached to adhesive at the finger tip and at the wrist, holding the finger flexed and having the patient actively extend while the rubber band pulls the finger back into flexion.

Fractures of the Metacarpals

These fractures fall naturally into four clinical (i.e. therapeutic) groups, those of the bases of the second to fifth metacarpals inclusive, those of the shafts of the same bones, those of the necks of the same group, and the fractures of the first metacarpal

Simple fracture of bases of metacarpals two to five This group presents as a

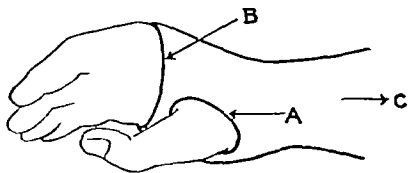


Fig 3 Gauntlet of plaster-of-Paris A—Thumb completely free. B—Edge leaves metacarpophalangeal articulations free. C—Extends to just short of elbow. Should be thin but well-hardened, with minimal amount of padding and accurately molded.

Fig 4 Securing low degree constant heat A—Suspension apparatus shown in Fig 2 B—Close woven blanketing pinned around suspension cord. C—Forty watt bulb in goose neck lamp beneath blanket tent. D—Close woven blanket tent pinned to bed clothes

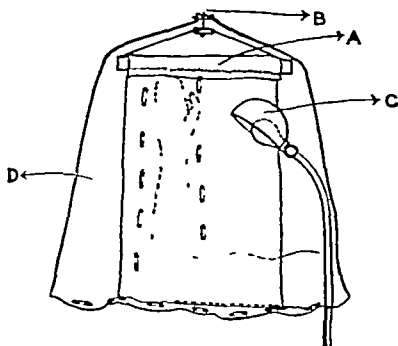
The accumulation of heat from a forty watt bulb is sufficient to produce comfortable and effective temperature with no risk of burn. The light is inside the blanket but outside the sling suspension

whole the simplest picture and best prognosis of the hand fractures in so far as the bone lesion is concerned. Where the bone lesion is merely part of a general crushing of the hand, the problem is the different one of the crushed hand, which is dealt with below

The violence resulting in these fractures is usually of the direct type—a falling object striking the back of the hand, a blow from a hammer or other tool, a dropping window sash, etc. Ipso facto there is usually a considerable amount of soft part swelling, with marked local pain and tenderness. This, in fact, constitutes almost the entire clinical picture, since there is practically never any appreciable displacement due to the firm and extensive metacarpophalangeal and intermetacarpal ligaments covering the bases of the bones. Occasionally indirect violence, such as a fist blow against a hard object,

will result in this fracture, but this is much more apt to produce either shaft or neck fractures. When indirect violence is the cause, the local pain and tenderness are apt to be less marked and more short lived

The sign which is of value in differentiating these fractures of the base in the presence of severe contusion of the soft parts is indirect tenderness. This is



elicited by pressure against the metacarpal heads in the long axis of the bone with the wrist fixed in extension. This gives pain in the fracture site at the base. In the presence of such indirect tenderness, x-rays centered on the bases of the metacarpals and taken in anteroposterior, lateral, and oblique views will show the fracture. Due to the lack of displacement, the oblique views are important, as the lateral view of the hand is usually not of much value by reason of the mutual overlapping of all the metacarpal bases

The treatment of these cases is a matter of attention to soft part pathology. There is usually no reduction needed in the uncomplicated case, and the fracture requires but a ten day or at the most two weeks immobilization in an interior moulded plaster or other splint in slight cock-up position. The pathology in periosteum, ligament, and tendon overlying

thickening to throw out the mechanism of the joint. We are accustomed to think of the normal joint capsular thickenings as the result of healing as having little bearing on ultimate joint function, but we are accustomed to thinking in terms of knees, hips, ankles, wrists, and similar large joints having gross movements. One can readily realize that a pinch of dust in the works of a grand-

trate on the capsular and synovial mechanism rather than on the bone lesion.

This conception of disability causes also makes evident the reason why manipulation of stiff fingers is so frequently ineffective—each manipulation is followed by a little hemorrhage perhaps, a little exudation into the capsular structures certainly, a little ensuing tissue produc-

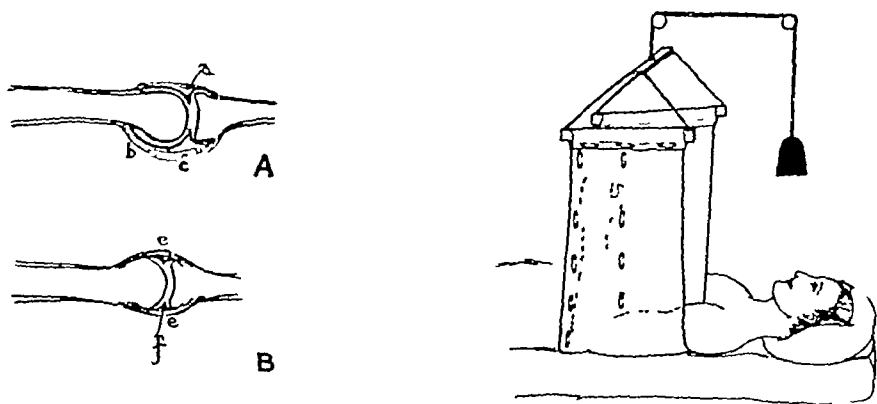


Fig 1 Lateral and dorsoventral views of phalangeal articulation

A—Lateral view

a—dorsal ligament, b—ventral ligament, c—fibrous and cartilaginous plate in ventral ligament known as the glenoid ligament, d—synovial and subsynovial fold.

Of note are the thinness of the ligaments proper, the laxity of them and the synovial structure allowing free movement in the dorsoventral plane, and the ligamentous attachments at some distance from the joint margin, allowing for play in the same place.

The glenoid ligaments are really thickened fibrous plates which are cartilaginous at their points of attachment to, or merging with, the collateral ligaments. They are grooved anteriorly for the flexor tendons. Normally quite flexible, it takes but little additional thickening or fibrosis to make them stiff enough to seriously affect motion.

B—Dorsoventral view

e—Collateral ligaments, f—synovial and subsynovial fold.

Of note are the relative thickness and denseness of the ligaments as compared with the anterior and posterior ones, the closeness of attachment to the articular margin giving very little play to either side, and the relative scantiness of synovia and subsynovia indicative of little lateral mobility.

Fig 2 Elbow sling suspension

A sling of canton flannel or muslin pinned to suspension sticks suspended from cross bar. Suspension weight in reach of other hand for easy shift of position. Hand and forearm pinned into sling. Thumb free.

father clock would not be a matter of worry. But a pinch of dust in a tiny fine-jeweled Swiss watch would render its mechanism worthless.

Here then is our second lead as to the principles to adopt in treating and evaluating fractures of the hand. In fractures involving the capsule of the joint by proximity or actual invasion, concen-

tion, with further thickening and disability.

In discussing the care of these fractures we shall deal first with simple fractures involving the metacarpals, then simple fractures of the phalanges, and lastly with the compound fractures and crushes as a group.

whole philosophy of the modern conception of fracture treatment is embodied in the handling of this simple lesion, and I have therefore been led to go into some detail in discussing it, since it provides the basis for the rationale of the handling of this whole group of fractures

Simple fractures of the metacarpal shafts These may be due to either direct or indirect violence. Those due to direct violence are apt to be transverse, and to show angulation, usually directed dorsally and open volarly, as their deformity. Those due to indirect violence are apt to be oblique or spiral and add to the angular deformity various degrees of over riding and lateral displacements of the fragments. In either instance there is some shortening of the bone and consequent recession or dropping of the knuckle prominence for the bone or bones involved. Both types may, of course, occur under minimal violence without displacement, in which case the diagnosis is made by local signs plus indirect tenderness elicited as described under fractures of the metacarpal bases. Those showing a spiral line of fracture, which may extend practically from head to base at times, can be produced by purely torsional strain on the tightly gripping hand. As in fractures of the metacarpal bases the soft part pathology is most marked in the cases due to direct violence which in this group, however, constitute the minority.

The principles of treatment are precisely those outlined under the discussion of the metacarpal base fracture. When the fracture shows no displacement, the treatment programs are identical. When displacement exists, the program must be modified in accordance with the necessity for reduction of the deformity and maintenance of that reduction until adequate healing has occurred.

It has been fairly widespread traditional practice to treat fractures of the metacarpals by bandaging the hand and fingers over a roller bandage until such time as union has occurred. I do not believe that under present day conceptions of the purpose of fracture treatment, such procedure is ever justified by any fracture of the metacarpal. If there is no displacement the immobilization of the fingers is undesirable, purposeless, and

may be harmful. If there is displacement, such a procedure tends to maintain or increase it. The practice should be relegated to the limbo of those discarded methods which can be labelled "simple, but ineffective."

If the deformity existing is merely an angular one, and the fracture line is transverse, manual correction can be usually readily accomplished, and the reduction can be maintained by a carefully moulded circular plaster gauntlet with little or no padding, extending from just

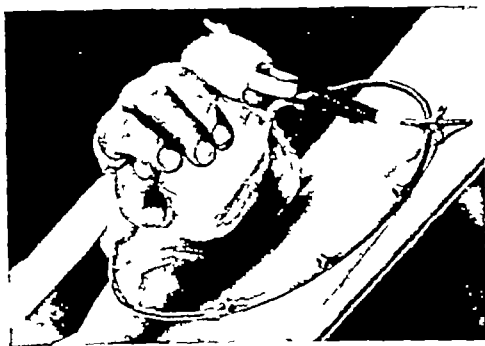


Fig 7 Finger pin traction—"head-on" view. Note moderate dorsal cock-up.

proximal to the metacarpo phalangeal joints to just distal to the elbow with the wrist in slight dorsiflexion, and allowing full elbow and finger motion (Fig 3). If the soft part swelling is marked, the physical therapy measures described under fracture of the metacarpal bases, plus, if necessary, suspension in elevation until it is reduced sufficiently to make circular plaster both safe and effective is, in my experience, a better procedure than the attempt to reduce and hold a reduction in the presence of marked puffing of the hand. Even in cases with marked puffing, the use of immediate elevation, constant low degree heat of simple type (Fig 4) and static brush discharge will reduce the swelling within twenty-four to forty-eight hours to a point where circular plaster can be safely and effectively applied. The usual mistakes in the application of plaster are the attempt to substitute voluminous padding or tightness of application for accurate moulding, the blocking of the metacarpo-phalangeal joints, the extending of the plaster to but a short distance above the wrist giving ineffective leverage for

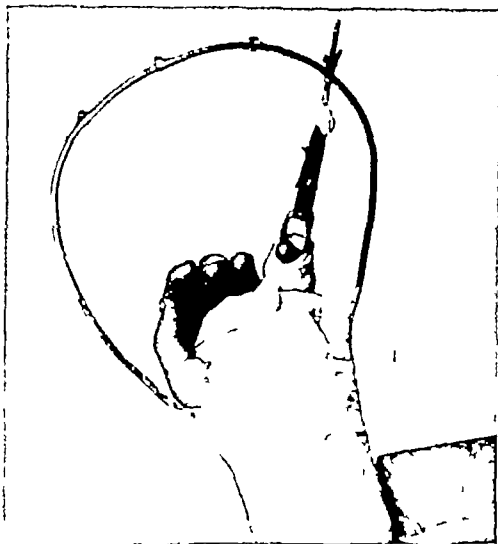


Fig 5 Finger pin traction—palmar view. Plaster gauntlet, "banjo" wire incorporated in plaster, elastic traction with screw adjustment, thin strip aluminum yoke. Plaster should be as light weight as is consistent with rigidity. "Banjo" bar is drilled at intervals. Elastic attached to hooked end of threaded rod passed through drilled hole. Set screw adjustment tightens or loosens pull.

the fracture produces what late and persistent symptoms there may be. These symptoms are local tenderness, a visible "bump"—which looks bony but is usually not—and pain on forceful grasping with the hand or forced flexion of the wrist. The amount of motion at the metacarpocarpal joints is minimal, but is enough to produce pain in forceful movements of the wrist if the ligaments are markedly thickened for a considerable period of time. The periosteal and ligamentous

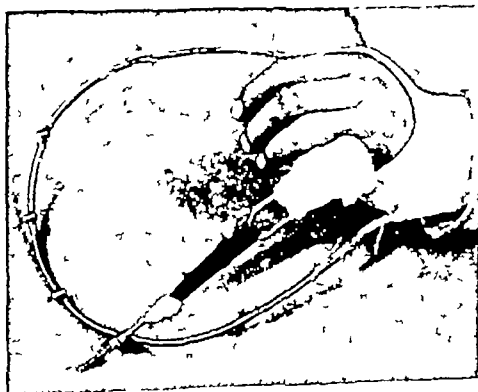


Fig 6 Finger pin traction—dorsal view

thickening may produce prolonged local tenderness, and the tendon pathology may result in some persistent pain, and thereby some weakness on firm grasping with the hand and forced movements of the wrist.

The best safeguard against the annoying persistence of such symptoms is therapy directed toward the removal of early soft part pathology, before it can become organized into persistent tissue change. Since there is characteristically little or no displacement of the fragments we can remove the splinting for such treatment as often as need be from the beginning. As in so many other traumatic lesions, physical therapy is of value here early. Its value late—two or three weeks after the injury when hemorrhage and exudate have been organized into tissue—is small. Static brush discharge and autocondensation applied within a few hours of the injury may do a great deal to minimize the amount of soft part infiltration. Hot soaks two or three times a day, low millampereage diathermy once or twice a day, if combined with finger exercise within pain limits on a railroad schedule basis—every hour on the hour—for five minutes or so in the hour, represent all that is necessary in the way of active treatment in the first five to seven days. In addition, sling elevation with the hand over the opposite clavicle or shoulder between treatments, or in those with extreme swelling, bed rest with the hand in elevation by a suspension sling beneath the elbow (Fig 2) should be carried out. It is obvious that circular plaster in these cases is a handicap, since it obviates much of the early attack on the soft part pathology which is the basis of late symptoms.

Under such a regime the recovery from a fracture of this type should be both complete and rapid. It would probably be complete under any method of treatment, but in industrial cases the time of convalescence is an all important factor, as has been pointed out. If the part is merely immobilized for two or three weeks, as is a common practice, at the end of that time being subjected to physical therapy, and if the finger exercise is not from the beginning put on a railroad schedule, then one is apt to get the annoying persistence of symptoms referred to above. It seems to me that the

exercise is carried out as in the preceding group. This method of treatment allows of a maximum maintenance of function during the course of fracture healing and a minimum of disability time after the fracture is healed. Its only disadvantage is the theoretical risk of infection due to the use of pins. With decent surgical technic, and with the pin sites sealed by a cotton collodion dressing, and with adequate supervision of the post reduction care, this should not be sufficient to constitute a valid objection to the method. If it is considered inadvisable to use skeletal traction, some form of skin traction must be substituted. It has the definite disadvantage that it is less effective mechanically, that it immobilizes all the joints in the affected finger, that it is apt to keep slipping, and that attempts to apply it extensively and firmly enough to

prevent slipping may result in circulatory difficulty with skin damage or gangrene. Some of the methods which can be utilized are illustrated in Fig 11, with note as to their good points and dangers. Under this method the results are less apt to be satisfactory anatomically, and the convalescence time is apt to be longer. Occasionally, with marked deformity, an open reduction is necessary through inability to get satisfactory reduction by other means. This is rarely true when only one metacarpal is involved, and almost never true when skeletal traction is used. Fixation at operation is difficult, as catgut, silk or wire usually has to be used, and the fixation accomplished is not enough to allow of active motion without splinting, it is our feeling that operative reductions in these cases should be avoided, and can be if skeletal traction is adequately used.

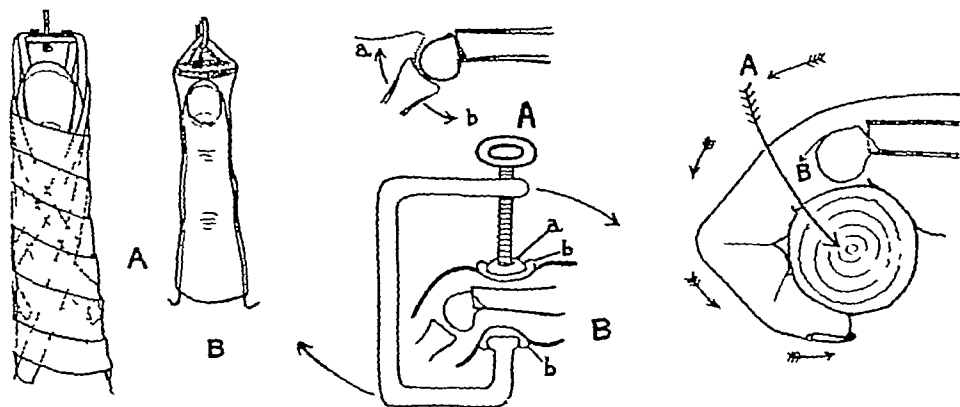


Fig 11 *Skin Traction*

A—Multiple spiral strips covered by Ace type of woven elastic bandage. Spreader is essential. Holds well but there is possibility of circulatory interference.

B—Glove finger (leather) glued to finger. Ten cent piece in finger tip of glove acts as spreader. Holds well but less chance of circulatory disturbance.

C—Lateral adhesive strips with or without Ace bandage—*Not to be used*—lateral application is serious circulatory risk.

D—Anterior and posterior strips do not hold well

E—Japanese finger basket holds well, but there is definite circulatory risk.

Fig 12 A—Deformity of metacarpal neck fracture. Note palmar angulation of head on shaft and the impaction of the palmar aspect. An apparent paradox in functional disturbance exists. One would assume that with flexion deformity, there would be limitation of extension. But extension (a) is full, and the limitation is in flexion (b) due to the soft tissues crowding forward and giving mechanical interference.

B—Method of reduction. A weavers clamp of metal, having a pivoted flat button at (a) is screwed down tightly over two small felt pads (b). A sudden tilting of the clamp as indicated by arrows, the hand being held fixed by an assistant forces the head fragment backward as it also tends to disimpact it.

Fig 13 *Tendency of roller bandage to increase the deformity.* The bandage, following the direction of the small arrows produced the general effect of arrow A with the tendency to force B on the head fragment.

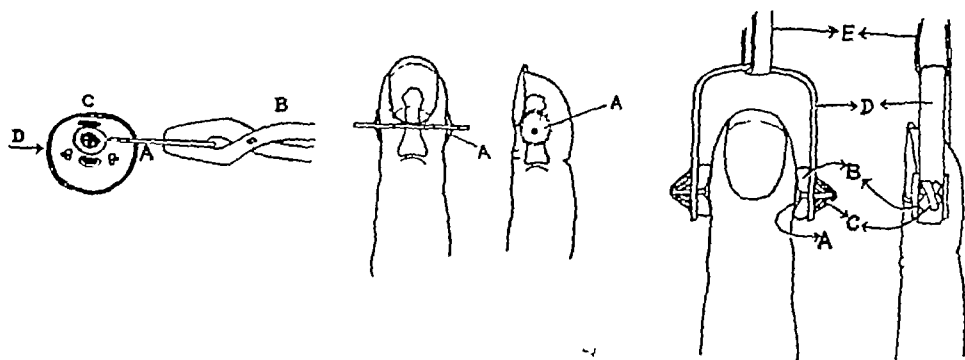


Fig 8 Insertion of pin C—dorsum. The position of the dorsal tendon, the ventral tendon and sheath, and the digital vessels and nerves is indicated

A—Kidney needle. B—Ordinary pliers (boiled) is rotated to and fro to bore needle through phalanx against manual counter pressure at D. Skin should be nicked with knife point before penetration by needle. Rigid asepsis is essential

Fig 9 After needle insertion

A—Thin piece of cotton sealed to skin and to pin by collodion

Fig 10 A—Cotton collodion as in Fig 9

B—Small piece of felt to fill in interval between yoke and dressing to prevent "sliding" of pin

C—Adhesive covering sharp ends of pin and acting as hub to prevent shifting of the yoke

D—Yoke cut from thin sheet aluminum

E—Rubber band for elastic traction.

maintaining correction, and the substituting of amount for quality of plaster, resulting in a heavy, cumbersome, and disabling weight. Finger exercise within pain limits on the "railroad" schedule previously referred to is essential from the beginning, and intermittent elbow exercise as well. When not exercising, sling elevation of hand as previously described is indicated. The sling is gradually discarded so that by the end of seven to ten days the patient can be allowed to use the hand in its plaster encasement for everything—in fact, must be urged to do so. Under this method such a transverse fracture, with angular displacement, can be returned to clerical work wearing his gauntlet in a week or so, and ten days to two weeks may see many manual workers at least at light work. The plaster is worn until union occurs—three to five weeks on the average. If active use of the hand and arm has been enforced during this period there is but little further disability time, and the need for late physical therapy is minimal. If the arm and fingers have been allowed to remain inactive, swelling on use, stiffness of fingers, wrist and elbow, and prolonged convalescence may be the result.

When an oblique or spiral fracture with overriding exists a different procedure is called for. Reduction and maintenance of reduction in these cases calls for a traction force. It can be applied in various ways. The best way is that which will allow of the minimum of interference with function during the process of the bone repair. We have found that to be skeletal traction by means of a wire passed through the proximal phalanx, as close to the web of the fingers as possible. A thin flat aluminum loop is then placed over the ends of the pin, and through a rubber band traction is applied by a banjo splint. The plaster casing in which the banjo is held has a palmar forward projection at the proper cock-up angle to correct any tendency to angulation when combined with the proper angle of traction. Enough tension is applied to the rubber band traction to correct overriding. The plaster incasement in this instance should also extend to just below the elbow, and should allow full motion of the fingers not in traction (Fig 5 to 10). The use of skeletal traction through the proximal phalanx will allow of early motion in the two interphalangeal joints of the affected finger. Sling elevation and

tion of this rather arduous treatment. In a manual worker a moderate amount of depression into the palm may constitute a definite indication for the treatment described particularly in the right hand in right-handed individuals, and the left hand in the left-handed. As will be noted a small amount of traction only is needed. It has therefore hardly seemed worthwhile to use the skeletal form, although if ap-

pulp, just distal to the end of the distal phalanx as recommended by Böhler. The former I have employed and consider unsatisfactory by reason of both the discomfort entailed and the nail damage resultant. The latter I have never employed. It has been highly recommended by Bohler, and it is claimed to be painless and without risk of infection or soft part slough. I have seen it in operation in Germany,

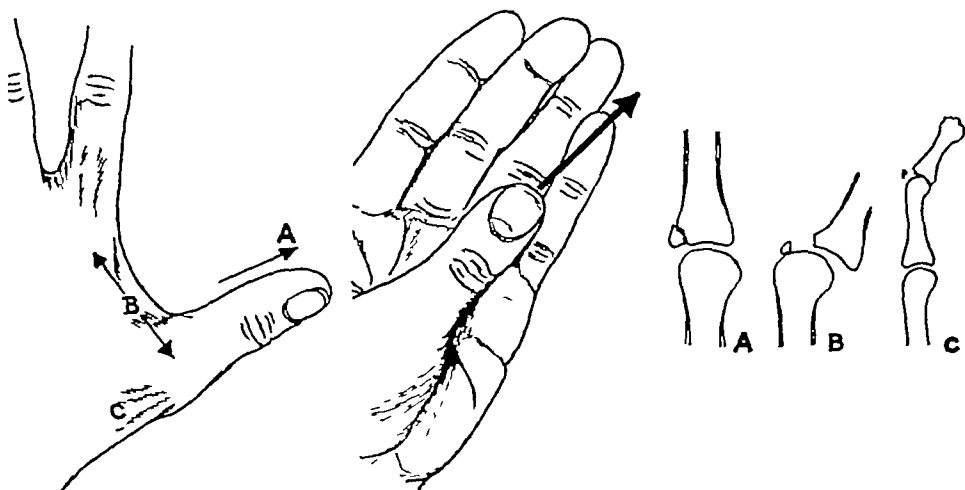


Fig 17 A—Common direction of traction and position of fixation in first metacarpal base fractures. B—Tautly stretched musculature. C—"Snuff box."

Fig 18 Proper direction of traction and position of fixation. (See text)

Fig 19 Types of marginal phalangeal fracture

A should be started on intermittent active motion promptly. B is subluxated, and replacement with immobilization to maintain position is apt to result in stiffness. C is the so-called baseball finger in which the extensor tendon attachment is torn out and with it a small fragment of bone. Hyperextension immobilization works well in this type of case.

In all these lesions the capsular lesion is by far the most important.

plied through the proximal phalanx, it has all the theoretical advantages which it has in the shaft fractures. The immobilization time is short—10–14 days—and for this reason wire traction has not been felt to have the practical value which it possesses in theory. In the shaft fractures, where three to four weeks immobilization is the rule, the situation is different. The traction is therefore made by one of the means of skin traction (Fig 11).

There are two other forms of traction which may be employed in these cases, as well as in the phalangeal cases to be considered below. One is by silk or wire loop through the finger nail. The other is by a wire loop passed through the finger

Austria, and England. I have never been able to convince myself that it had anything but disadvantages as apposed to skeletal traction. I am, therefore, not ignorant of the method, but am completely inexperienced in its use, and have nothing to support my aversion to it but a conviction that it is not as effective as skeletal traction and must be at least as dangerous, if there be danger in either method.

Fractures of the first metacarpal. These are listed as a separate group because of the fact that they involve the thumb, and because their treatment is commonly carried out on unphysiological and unsound mechanical lines. The same principles and the same methods in general are car-

Fractures through the metacarpal necks
These are commonly caused by indirect violence, due to a blow directed against the knuckle. The common story is a fall on the back of the hand or the clenched fist, or a blow on the back of the hand. The real etiology of the majority of them is a blow of the clenched fist landing on an unexpectedly hard portion of another individual, such as the skull,

and sling elevation will allow of progressive active motion with a short disability time. If the angulation is marked, and the prominence in the palm easily palpable, reduction and maintenance thereof is indicated. This certainly can not be accomplished by bandaging the hand over a roller bandage. If anything this serves to maintain or increase the deformity. The fragments are usually impacted and hy-

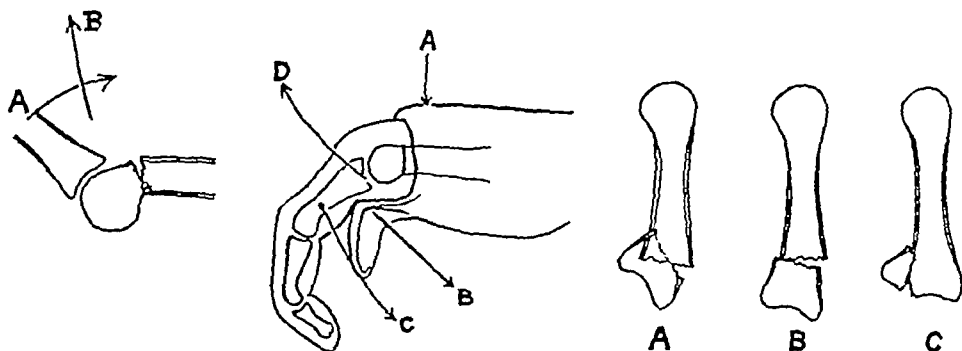


Fig 14 Pure hyperextension (A) obviously tends to increase the deformity. Theoretically traction in hyperextension (B) should tend to correct the deformity. Actually there is no such appreciable effect.

Fig 15 A—Plaster gauntlet extending well up towards elbow, with right angled palmar turn distal to metacarpophalangeal junction. Traction C uses phalanx as a lever over fulcrum B with resultant effect D tending to lift head dorsally. End A of plaster dorsally holds the shaft fixed.

Fig 16 Three types of first metacarpal base fracture

A—requires traction and fixation as described in text. B is susceptible to manual replacement and any adequate fixation. C requires the same treatment as A, but is far more difficult to get satisfactorily reduced, and involves the carpo-metacarpal joint.

or, due to inadvertently missing the target altogether, landing on an adjacent wall or similar object. The characteristic deformity is a forward angulation of the head into the palm with a "dropped knuckle." The characteristic disability, when there is one, is some limitation of volar flexion in the metacarpo phalangeal joint, and the complaint of pressure pain over the palmar prominence when a hammer, wrench or screw driver has to be used. It is comparable to the metatarsalgia which is characteristic of abnormal weight bearing on one of the metatarsal heads in disturbances of the so-called anterior metatarsal arch in the foot. These fractures are, as might be expected from the nature of the violence, usually impacted. If the angulation is but slight a few days immobilization with the early physical therapy already alluded to

per-extension of the phalanges tends to increase the deformity, although it is commonly used as a method of reduction. The distal fragment is small and manual reduction is difficult, frequently impossible, for this reason. We have found reduction, where indicated, best accomplished by the means illustrated in Fig 12 to 14. When reduction is secured it can best be maintained by the mechanism illustrated in Fig 15, the same mechanism utilized in a comparable fracture, that of the supracondylar fracture of the femur. As will be noted, active use of the fingers not involved is possible, and the treatment is in principle and practice that already indicated for the other groups. In a clerical worker, if the "dropped" knuckle does not in itself constitute an unsatisfactory result, considerable deformity should be present to warrant the institu-

maintained, stiffness of the involved joint may be permanent. The possibility of this outcome when fixation is practiced is great. The possibility is minimized if banjo splint elastic skeletal traction is used with the plane of the banjo traction changed several times daily, with active motion against the traction in its various positions on the "railroad schedule" previously referred to, and with early elevation and constant low heat to get rid of as much hemorrhage and exudate infiltration in the tissue as possible. (Fig 5 to 10)

Primary operative excision or replacement of the avulsed fragment and suture of the torn capsule has been suggested and attempted, but the results are not at all good, since the operative trauma added to the trauma of injury merely increases the amount of thickening of the delicate capsular structures in the healing process with resultant stiffness.

It is important to realize that the mere thickening occasioned by the normal healing process in the capsular lesion may be sufficient to cause some stiffening of the joint, and that the end result is dependent far more on this factor than on the x-ray picture.

Crushes and Compound Fractures

From what has already been mentioned in reference to the importance of soft part scarring and its effects on the function of tendon, joint capsule, and synovial pouches, it is obvious that compounding of hand fractures is a serious complication, both from the standpoint of the amount of new tissue produced and from the risk of super-added infection to which bone, joint, tendon, tendon sheath, and the closed hand spaces are exposed. The actual bone lesion fades into relative insignificance in comparison with these risks. Even when crushing of the tissues without compounding complicates the fracture or fractures, the fibrous tissue production in the crushed tissue in and about the various structures detailed above is of much more import to us than the actual bone lesions. In compounding wounds, complicating hand fractures early, gentle, but thorough debridement of all dead and devitalized tissue is essential. It must be done with care and pre-

cision and a minimum of violence. Tendon and nerve tissue must be proven intact, or if damaged, must be repaired after the debridement but at the time of primary treatment. Late repair of hand tendons is difficult, late repair of hand nerve injuries not only difficult, but frequently impossible. In order that scar tissue shall be kept at a minimum and that tendon and nerve repair, if done, may have some chance of successful outcome, the prevention of infection in the compounded, and often crushed, tissues is of paramount importance. For this reason I shall here briefly recount an adequate method of debridement.

Having determined that circulation to the hand as a whole is intact, a tourniquet is applied above the wrist. The wound itself is then packed gently but firmly with sterile packing, and a green soap and water cleansing of the skin of the whole hand is done, using lots of soap and water, plenty of time, but no violence. The old type cleansing by a vigorously wielded brush added trauma to that already present. It is better to substitute time and cleansing material for vim and vitality. If the injury has been occasioned by machinery, and oil and grease are present, benzine may precede the use of soap and water. Following the soap and water cleansing such shaving as may be indicated for dorsal

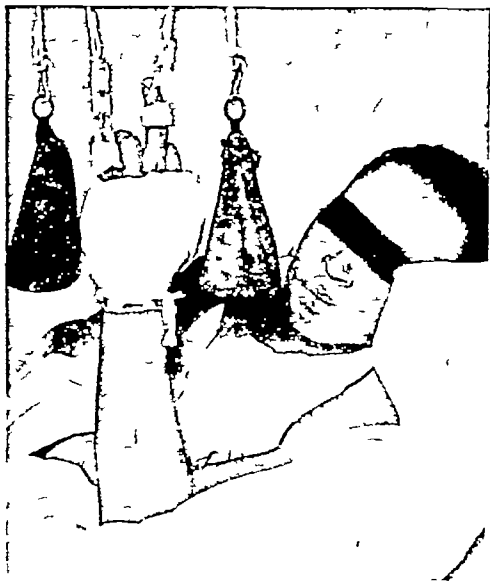


Fig 21 Suspension traction detail (Compare with Fig 5 to 10)

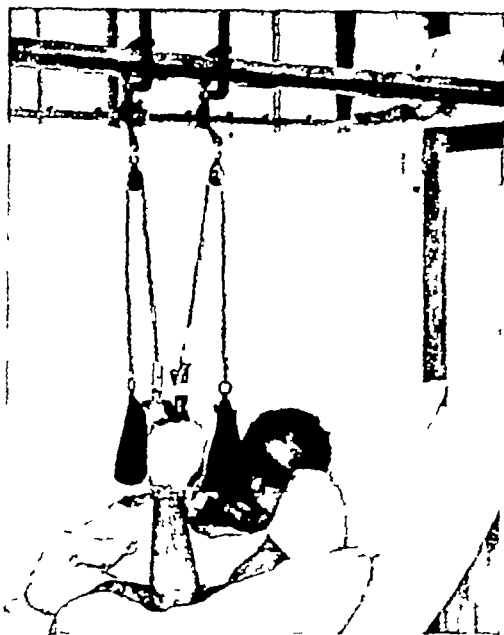


Fig 20 Suspension substituted for the banjo splint traction

ried out as in other metacarpal fractures. Fracture of the base of the first metacarpal is commonly marked by a greater or lesser degree of adduction deformity of the shaft on the base, in contradistinction to the fractures of the bases of the other four metacarpals. When this is marked, or when the fracture line invades the joint, correction of the deformity is indicated (Fig 16). When it is mild and the joint surface is not involved, the treatment as for other metacarpal fractures without displacement is in order. The traction methods, using the banjo splint, elastic skeletal traction by preference or others by virtue of necessity, are the indicated means for correction and maintenance of correction of deformity. But this is commonly practiced (Fig 17) against the tightly stretched adductors and flexors of the thumb, and in my own experience has been very unsatisfactory in its results. In addition, any stiffness which may result hinders adduction and flexion of the thumb, essential motions for a useful hand. I have found that the best anatomical and functional results are secured by traction applied, as shown in Fig 18, with the thumb adducted and flexed parallel with the plane of the extended fingers

and pointing in a line passing above the tip of the little finger. In this position all the finger tips can be applied to the tip of the thumb, and if there is any limitation of flexibility in the metacarpophalangeal joint it is in adduction and extension, much less important and valuable movements. When the first metacarpal shaft is involved with displacement, the same indications are present. It is interesting to note that by the use of skeletal traction through the first phalanx, the active use of function in the interphalangeal joint can be preserved, and apposition of the finger tips can be practiced throughout the healing of the bone lesion.

Simple Phalangeal Fractures

These are by far more disabling than the metacarpal fractures. The anatomical and physiological reasons therefore have been presented in the introduction to this paper. The principles involved in treatment of the shaft fractures are precisely those presented for treating fractures of the metacarpals, and are carried out by comparable methods. Those without displacement are treated as are the similar metacarpal fractures. Those with displacement are best treated by traction methods, and the same remarks apply to them as apply to the metacarpals. The actual appliances are shown in Fig 5 to 10. The prognosis in simple shaft fractures should be good by these methods both as to end result and as to the time element involved. The treatment following the reduction by elastic traction in the proper planes is that described for metacarpal fractures similarly treated. Finger stiffness is more apt to follow rigid immobilization without traction because of tendon fixation and soft part thickening by reason of organized hemorrhage and exudate.

There are in the simple fracture group, however, a class of fractures prone to give trouble. They are illustrated in Fig 19 and represent an avulsion of the articular margin with or without subluxation of the finger. The reason for the disability in these cases lies in the soft part changes in the torn capsule and synovial folds and the glenoid ligament disturbance, and even when adequate reduction has been secured and is shown by x-ray, and has been

Summary

Fractures of the hand are a source of frequent severe disability in industry

The causes of disability lie in the tendon and joint changes rather than in difficulties with the bone lesion

These changes are part of the normal healing process, and are disabling in the hand because of the delicate mechanism of the structures involved, which may be thrown out of gear by the thickening occasioned by normal healing

Compounding and crushing greatly increase the risk of disability

Treatment methods embodying manual reductions and plaster immobilization are least calculated to produce good results

Treatment methods involving skeletal traction, active mobilization within pain limits, and early attack on soft part pathology are best calculated to produce good results

Where joint capsule is involved some disability may be unavoidable, even under the best of treatment

Meticulous attention to detail, frequent observation, and untiring patience are among the most important factors in securing satisfying results. End results must be evaluated economically from a dual standpoint—that of the nature of the result, and the time required to secure it

180 FORT WASHINGTON AVE.

MEDICAL DENTAL CONVENTION

The Medical-Dental Convention, as arranged by the Joint Committee of the Organized Medical and Dental Professions of the City of New York will be held December 7 at the Hotel Pennsylvania, New York City

10 A M INVOCATION

Presiding, Clarence J. O'Connor, M.D., Pres. Bronx County Medical Society and James M. Dobbins, M.D., Pres. Queens County Medical Society

Progress Report of Subcommittee on Curricula Study, M. O. Magid, M.D., Chairman

1 Diseases of the Oral Cavity of Medical and Dental Interest, Samuel Feldman, M.D. Discussion by Leo Spiegel, M.D. and Henry Dunning, D.D.S., M.D.

2 Medical Problems in Orthodontia. Bernhard W. Weinberger, D.D.S. Discussion by Ralph Waldron, D.D.S. and Edward Mason Griffin, D.D.S.

2 15 P M CLINICAL MEETING

Presiding, Henry Joachim, M.D., Pres. Kings County Medical Society and Wm J. Buntin, M.D., Pres. Richmond County Medical Society

1 Lesions in Oral Cavity. Presentation of Patients—Clinical Pathological and Roentgenological data. Adolph Berger, D.D.S.

2 Vitamin Deficiency Conditions in Children—Presentation of Patients. Reuben Turner, M.D.

3 Clinic—New York Institute of Clinical Oral Pathology. Cases to be presented by Raymond Gettinger, M.D., Herman L. Reiss, D.D.S., and Meyer L. Rosoff, D.D.S.

4 Radical Antrum Operation. Cases illustrating the superiority of the Intranasal Route over the Canine Fossa Approach. Simon L. Ruskin, M.D., and Max Halle, M.D.

Note Discussion or questions after each group of cases

8 15 P M STATED MEETING

First District Dental Society

Presiding, Jacob B. Schneer, D.D.S., Pres. First District Dental Society and Chas. E. Farr, M.D., Pres. N. Y. County Medical Society

1 Executive Session.

2 The Responsibility of the Dental Profession in the Early Diagnosis of Intraoral Cancer, Hayes E. Martin, M.D.

The object of this meeting is to call attention of the members of both professions to the close relationship existing between systemic and dental diseases and to stimulate more interest and greater cooperation between the practitioners in the care of their patients, to the end that the public shall receive better health service.

The meeting will be held under the auspices of the First District Dental Society, Second District Dental Society, Bronx County Medical Society, Kings County Medical Society, New York County Medical Society, Queens County Medical Society, and Richmond County Medical Society.

M. O. MACID, M.D., *Chairman*

ORVILLE S. LONG, D.D.S., *Vice Chairman*

ROY D. RIBBLE, D.D.S., *Secretary-Treasurer*

ALBERT F. R. ANDRESEN, M.D.

THEODOR BLUM, M.D., D.D.S.

WILLIAM MCGILL BURNS, D.D.S.

LAWRENCE J. DUNN, D.D.S.

JOHN STANLEY KENNEY, M.D.

FRANK R. MAZZOLA, M.D.

MORTIMER B. GENAUER, M.D.

injuries is done. The skin is then cleansed with alcohol, and then with ether. A 3½ per cent solution of iodine is then applied, allowed to dry, and the wounded area draped. The sterile plug is then removed from the wound, and a meticulous removal of dead, grossly contaminated, or frayed-out tissues is done, using a sharp scalpel and not a scissors. The latter crushes tissue. This is done in layers circumferentially, changing the instruments for fresh ones for each layer, or cleansing them between layers. The skin, the subcutaneous tissue, the fascial planes, the subfascial and tendinous planes, and the fracture site are done as separate layers. By changing the instruments between layers we keep from insuring the fact that surface contamination will be carried to the depths of the wound. During this procedure we carefully note the condition of tendons, nerves and, if exposed, joints. The wound is then lavaged, using a small soft-tipped rubber catheter with gallons of normal saline—not with a few ounces. If grease is present in the wound itself, this is preceded by ether lavage sufficient to remove it. There is no use of antiseptics which may injure the tissues as well as organisms, and we depend entirely on the mechanical factors of meticulous debridement and prolonged mechanical lavage of the surfaces left after debridement. The catheter is inserted to the depths of the wound and the lavage carried on from the depths outward. The saline container is elevated sufficiently so that a fair amount of force is given to the stream. Let me emphasize the point that gallons, not ounces, of saline is necessary. The speed of the procedure is of much less importance than the meticulous nature and completeness of the debridement and the thoroughness of the ensuing lavage.

Time becomes of paramount importance, however, in reference to the interval allowed to elapse between time of injury and the time of debridement. A wound treated within a few minutes to an hour of injury presents the problem of getting rid of surface contamination. A wound treated three, four, five or more hours after injury often represents a futile effort to get rid of infection which has actually penetrated into the tissues beyond our reach. We should think of debridement in terms of minutes after injury in calculating our chances of avoiding infection, not in terms of hours.

Following this debridement and lavage, such tendon and nerve injuries as are

present should be repaired as simply as possible. The tourniquet is then removed, and any bleeding points becoming apparent are clamped and ligated. A few loose sutures may then be used to bring skin edges into loose approximation. A few only should be used, enough to prevent wide gaping of the skin, and no suture should ever be placed which causes tension. If the skin edges can not be loosely and easily approximated, they should be allowed to gape and the wound very loosely packed with vaseline gauze. If it has been possible to approximate the skin edges loosely, vaseline gauze strips are laid over it and a loose fluffy dressing applied. We are now ready to treat the fracture *per se*. The treatment of the fracture is carried out preferably by the use of the traction methods described for simple fracture, using at first bed rest with skeletal traction in suspension as illustrated in Fig. 20 and 21 by preference, to be followed by banjo splint elastic traction as illustrated by Fig. 5 to 10 when wound healing and subsidence of swelling and infiltration allows. The general care of the fracture is, once the wound is satisfactory, exactly that detailed for the simple fracture. It is of course unnecessary to state that a very careful watch must be kept for the first three or four days for evidence of beginning infection, and that if it presents itself, it must be adequately and promptly dealt with. The skeletal suspension, without plaster or other splint, lends itself ideally to the observation and care of the soft part damage.

Brief mention should be made of one common form of compound injury—that of the nail if it is loose, and should, I avulsion or loosening of the nail, but with separation and comminution of the distal portion of the terminal phalanx.

The debridement should be done here as elsewhere, but should include removal of the nail if it is loose, and should, I believe, always include the *removal* of the separated distal fragments of the phalanx. Quicker convalescence, less chance of painful and tender finger ends and of stiff terminal phalanges, and less chance of infection are the advantages of this procedure. It has, so far as I know no disadvantages.

sistance through a widening or narrowing of arteries and arterioles in which the greatest resistance lies. Widening of the capillaries alone can not increase the blood flow of an organ very materially since the capillary resistance itself is only about a tenth of the general resistance of the arterial stream bed. Mechanisms for vascular widening or narrowing serve for the regulation of heat loss, of the functions of the sexual apparatus, and for the nutritive requirements of different parts. Some of these, like the blood flow through the sexual organs and for purposes of heat regulation, are mediated apparently through definite nerve paths. The factors for the distribution of blood for other purposes are less definite and in addition to nerve impulses and the effects of hormones from endocrine glands, we must consider other humoral or chemical factors, especially the acid base equilibrium in the tissues, result of lack of oxygen, effect of intermediary products of metabolism, and influence of certain substances like histamine, acetylcholin, and adenosine, definite chemical substances that exist normally in certain body tissues, probably in loose combinations with larger molecules from which it is thought they may be split off and exert in the normal physiology of the body effects that can be demonstrated in the study of their pharmacology. This rather special subject of study and research is dubbed by Sir Henry Dale³ autopharmacology or the chemical regulation of certain functions by natural constituents of the tissues. Still other materials have been studied by English⁴ and German⁵ workers, and by Major⁶ in this country—tissue extracts that show a definite vasodilating action but which are of unknown chemical composition. Kallikrein is still another highly active vasodilator substance first obtained by Frey and Kraut⁷ from normal urine and later found to exist in relatively large quantities in the pancreas. These workers considered and spoke of it as a circulatory hormone but its status is still unsettled.

Let us return for a moment to the minute volume output of the heart in order to emphasize a regulatory mechanism of great importance. We appreciate the importance of regulation when we realize that the heart minute volume at rest in man is about four liters and that with in-

tense physical work it mounts to twenty liters or more. There are several regulatory mechanisms at work but the point of primary importance is not a change in the heart action itself nor in its nervous excitations, but in the diastolic filling of the heart which in turn depends upon the amount of blood flow in the large veins. The healthy heart throws out all the blood that flows into it from the veins, it cannot expel more than it receives. The regulation of the venous flow back to the heart hence assumes a very important aspect. Here must be considered the veins themselves, intrathoracic pressures, and the so-called blood storing organs or blood depots, notably the spleen and the liver. The veins themselves are under nervous and hormonal control. The spleen is known to contract during physical work, after blood destruction, in anoxemia, and after adrenalin. Similarly the liver empties under the influence of adrenalin even up to sixty per cent of its weight in blood. With a widening of the veins, filling of the store houses, and retention of blood in the periphery, the venous pressure falls, the return flow to the heart is insufficient, the heart is poorly filled, the minute volume output sinks, the arterial blood pressure falls, and we have the setting for peripheral circulatory failure familiar in acute infectious diseases, surgical and traumatic shock, histamine shock, etc. Henderson⁸ and his associates have recently described a technic for the determination of pressure within a muscle. They believe that the tonic tissue pressure throughout the body combined with the negative pressure in the thorax that is largely dependent upon the tonus of the respiratory muscles determine the "effective venous pressure" that in health assures the venous return. On this basis, failure of the circulation in illness and after physical injuries is largely due to diminution of general body tonus and stagnation of blood in the flaccid tissues.

In the current literature, there are quite a number of articles⁹ dealing with the circulation time or velocity of blood flow, terms that are used almost interchangeably. Since the fundamental work of Blumgart¹⁰ and Weiss (1927), several different methods have been devised. The circulation time of the blood may be defined as the time required for a particle in

CERTAIN ASPECTS OF BLOOD FLOW

THOMAS P. SPRUNT, M.D., *Baltimore*

It is usually stimulating and helpful though not necessarily immediately fruitful to renew our acquaintance with the fundamental factors and to review recent additions to the knowledge of subjects with which we are working in medicine.

There is no system of the body of greater importance to the physical therapist than the circulation of the blood and the various mechanisms that control and regulate it. He may be called upon to aid in the treatment of patients with heart disease, arterial hypertension or hypotension, arteriosclerosis, other diseases of arteries or veins, and in addition, he is constantly aspiring to influence the blood flow favorably in his efforts toward the amelioration of diverse ailments.

The purpose of the circulation and the object of all its regulatory mechanisms is that each tissue should at any moment receive the blood supply necessary for its work. For this purpose we have the anatomical system of the heart, the arteries, arterioles, capillaries, venules, veins, and their own intrinsic blood vessels and nerves.

From the physiological angle we think in terms of the minute volume output of the heart, blood pressure, blood velocity and circulation time, blood volume flow, peripheral resistance, arteriolar or capillary constriction or dilatation, venous pressures, blood depots, blood volume, and venous return to the heart.

The regulating factors of the circulation are numerous, very complicated, some of them well-studied, others little known, and probably still others entirely beyond the present conception of the physiologists.

The peculiar properties of the heart muscle and its regulatory mechanisms are perhaps the best studied and best known of all but with these we shall not be immediately concerned. Of vast importance for the whole circulation is the autonomic nervous system with its cardioaccelerator and cardioinhibitory fibers, its vasoconstrictor and vasodilator fibers involving the arteries, arterioles, capillaries, and

veins. There are afferent and efferent impulses mediated through numerous reflex arcs with centers in the brain and the spinal cord, and with axone reflexes in the periphery. There are certain peripheral centers of nervous activity, especially the carotid sinus that exerts a commanding influence upon the whole circulation and is now the object of intensive research.¹ The nerve fibers of the carotid globus and in the bulb of the internal carotid, together with the depressor nerve from the root of the aorta are all afferent nerves, very sensitive to changes in pressure within the aorta and in the carotid vessels. Variations in these pressures set up afferent nerve impulses that result reflexly in variations in the heart rate, in blood pressure and in blood flow, in addition to their effect upon the respiration and other physiological phenomena.

The larger arteries and veins are probably in large part controlled through autonomic nervous impulses, but even at this level it is impossible to differentiate entirely such impulses from the effects of well-known hormones from endocrine glands, notably epinephrin and pituitrin. Of the many physiologists who have contributed to this knowledge, the work of Cannon² is particularly important and interesting in emphasizing the role of epinephrin in mediating and accentuating sympathetic nervous effects. As we approach the peripheral arteries, arterioles, and capillaries, our knowledge is less assured for in addition to the maintenance of the heart minute volume and of the general blood pressure that influence the general circulation, we must consider the additional mechanisms that divide up the minute volume output of the heart according to the need of the different and separate organs. During intense work the amount of blood to an organ or tissue is increased several times over that which occurs during rest and the question arises how this variable blood flow is brought about. Here there is generally recognized a differential change in the peripheral re-

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New York City, April 29, 1936*

meters of blood per 100 grams of tissue or organ per unit of time. The blood supply in different organs for each 100 grams of tissue per minute is given as follows:¹⁸ Stomach 21 c.c., intestines 71 c.c., spleen 58 c.c., liver, arterial 25 c.c., liver, venous 59 c.c., liver, total 84 c.c., brain 136 c.c., kidney 150 c.c., thyroid gland 560 c.c. By the use of the calorimeter method the blood flow through the hand of a healthy young man has been found to be about thirteen c.c. per 100 grams per minute, and for the foot about one-third to one-half that in the hand. There is an interesting comparison at varying degrees of temperature. At 32° C (approximately the normal temperature) the flow of blood in the hand was thirteen c.c. per 100 c.c. of tissue per minute. At 26° C the flow was 5.5 c.c. of blood per 100 c.c. of tissue per minute, and at 46° C the flow was 26 c.c. of blood.

Of great interest to us, though in quite a different direction, is the recent article by Allen¹⁷ on how arteries compensate for occlusion, an arteriographic study of collateral circulation. Such demonstrations emphasize the abundant provision the body has made for collateral arterial circulation and recall the experiments of Leriche¹⁸ some years ago in which he showed that portions of all the major arteries in dogs, even including a part of the aorta, might be resected at the same time and the animal's circulation be handicapped very little.

The study of the peripheral circulation, arterioles, capillaries, and venules, is of great interest, and you are probably familiar with the various methods in use. Here again are used the plethysmograph, calorimeter, and microscope for the study of capillaries, skin color charts, venous pressures, and skin temperatures. You are doubtless familiar with Kovac's¹⁹ work in capillaroscopy and with Bierman's²⁰ recent summary of the potentialities of skin temperature studies. Elliot²¹ has recently published a paper on the study of acrocyanosis in which he has devised ingenious charts for the comparison of skin color adapted somewhat from suggestions made previously by Lewis. Grant²² has recently studied the return of tone in capillaries and arterioles after complete denervation of

the part. He believes that this regain of tone is due to a substance circulating in the blood of the nature of a hormone and having an action quite similar to that of epinephrin, but it is present and its action persists even after the removal of the adrenal glands. The work of Sir Thomas Lewis²³ ten years ago on the blood vessels of the human skin and their responses remains a classic. You will recall that as a result of his experiments he found that numerous and widely different forms of stimulation yielded in common three distinct events. These were (1) the primary and local dilatation of the minute vessels of the skin, (2) widespread dilatation of the neighboring strong arterioles brought about entirely through a local nervous reflex, and (3) locally increased permeability of the vessel wall. In explanation of this complex mechanism, he postulated the release of a histamine-like substance and considered it a normal metabolite that is responsible for many of the normal vascular reactions as well as for those occurring under conditions of stress. These studies, it seems to me, make it seem quite probable that many of the reactions of the skin and other tissues to physical therapeutic procedures are really defense reactions on the part of tissues to outside agencies and are nonspecific as far as the particular therapeutic method is concerned.

If you should be interested in following somewhat further the modern conception of the regulatory mechanisms of the circulation, I would refer you to two interesting summary articles that appeared last year: one by Fleisch²⁴ on the physiological mechanisms, and the other by Bickel²⁵ on the regulation of the circulation in pathological states.

In a brief paper, one can but touch upon the important trends in physiological research concerning the circulation. It may be useful to us to realize the complexity of the subject and the confusion of the multiplicity of regulating factors that we may influence in our daily therapeutic procedures. Certainly the more the physiologists can discover and the more we can learn from them, the more fruitful should be our efforts.

the blood stream to pass between two chosen points. It is obvious then that no figures concerning circulation time are of any significance until the two chosen points are specified. The circulation time between such points is dependent upon the mean velocity of the blood, hence an increase in circulation time in any given area is significant of a decreased velocity of blood in that area, and vice versa. Most methods are based upon the principle of injecting into a superficial vein some relatively harmless material that can readily be detected at some distant point in the circulation. The Mayo Clinic workers inject a radioactive substance into the jugular vein and detect the passage of this substance through the femoral artery by means of an ionization chamber closely applied to the artery. The arm to lung time may be detected by injecting a small amount of ether into a cubital vein and detecting the first odor of ether on the breath. The arm to face time is determined by the injection of histamine and the detection of a flush on the skin of the face when the capillaries in that region are reached. Similarly the arm to tongue time may be estimated by the use of decholin or saccharine, the end point being the distinctive taste. In the same individual under uniform conditions, the velocity of blood flow is relatively constant. It varies of course with different physiological conditions and also in various pathological states. Of the latter, the velocity of blood flow is markedly retarded in cases of marked heart failure and in the incipient stages of this condition the retardation of the blood flow may be one of the earliest detectable indications. Blood velocity is retarded in myxedema with its slow rate of basal metabolism and in polycythemia with its marked increase in viscosity. The rate is greatly accelerated in hyperthyroid states and in fever, both spontaneous and therapeutically induced. The influence of therapeutically induced fever on the velocity of blood flow has been studied by Kissin and Bierman,¹¹ and again recently by Kopp.¹²

From the physiological standpoint, according to McCracken¹³ and his associates, the velocity of the circulation is increased after exercise and during digestion. It is also definitely accelerated after chilling to a degree productive of shiver-

ing and after exposure to an environmental temperature sufficient to elevate the rectal temperature of the body. They report also the effect of various drugs on the circulation time. Very interesting observations were those by Herrick, Essex, Mann, and Baldes,¹⁴ and also McCracken, Essex and Sheard¹⁵ on the influence of the digestion of food in dogs on the blood flow in the femoral, carotid, and mesenteric arteries, and the external jugular vein. For the determination of the volume rate of blood flow in these various vessels they made use of the modified thermostromuhr method of Rein and for the circulation time the ionization method above mentioned. It seems to have been assumed in physiology that during digestion blood is shunted to the digestive tract at the expense of the blood flow elsewhere. Contrary to current belief however these investigators found that the blood is not diverted from the somatic tissues to the visceral organs during digestion. Instead of a decrease in blood flow in the femoral and carotid arteries and the jugular vein, there is a marked prolonged increase during the digestive cycle. This was true also in the mesenteric arteries. The time of the onset and the duration of the increased flow was influenced by the character of the food taken, but the magnitude was relatively the same regardless of the type of food ingested. In general the highest values for blood flow obtained during digestion were about twice those obtained after an eighteen hour fast. The increase in blood flow following a meal was accompanied by an elevation in the pulse rate and by a shorter circulation time. Such a finding would seem suggestive of the idea that under various physiological conditions there may be less differentiation in the distribution of blood flow than we have been accustomed to believe.

Other methods of estimating blood flow include the use of different forms of the stromuhr, the use of the plethysmograph, and especially for an extremity the calorimetric method since the rate at which heat is dissipated from the hands or feet (e.g. into the water of a bath) will be directly proportional to the rate of movement of the blood to these parts. Instead of expressing results in terms of velocity of blood flow the figures are often transposed to read so many cubic centi-

GONOCOCCUS FILTRATE (CORBUS-FERRY) AS A SKIN SENSITIZATION TEST FOR GONORRHEA

CLYDE K. CONRAD, M D , *New York City*

The American urologist has, in the last few years, added another preparation to his armamentarium. Corbus-Ferry gonococcus filtrate is enjoying an enviable role as a specific antigen, an antigen which stimulates antibody formation through skin immunity. There is a very rapid accumulation of literature relating to the success of this product. One is led to believe that here at last is a specific aid in the treatment of gonorrhea.

The specificity of this type of antigen therapy immediately suggests the feasibility of using it as a diagnostic aid in obscure and residual types of gonorrheal infection.

There is no doubt that the diagnoses of acute gonorrheal urethritis, in the majority of cases, is a simple and comparatively easy procedure. However, a certain number of cases are not so easily diagnosed. In the obscure or residual type of infection a skin sensitization test, for the presence or absence of a gonorrheal infection, would have a very definite value.

It was decided to test the value of this filtrate as an aid to diagnosis. One hundred male cases were carefully selected, fifty cases gave a history of never having a gonorrheal infection, fifty cases gave every clinical and laboratory evidence of having a gonorrheal infection in various stages of complication or cure. These cases were given an intradermal injection of Corbus-Ferry gonococcus filtrate. Concurrently they were given a dose of the bouillon and normal saline used in the preparation of the filtrate. The dose and site of medication being the same in each case. The dose of each ingredient used was 1 c c. The extent of the reaction was measured each twenty-four hours until it entirely faded.

Chart I shows fifty cases having gonorrhea with positive smears. In this chart ninety-eight per cent of the cases show an average of 2.32 cm. of reaction forty-eight hours after injection.

Chart II shows fifty cases never infected with gonorrhea. In this chart only eighteen per cent of the cases show an

CHART I—GONORRHEA WITH POSITIVE SMEARS (50 CASES)

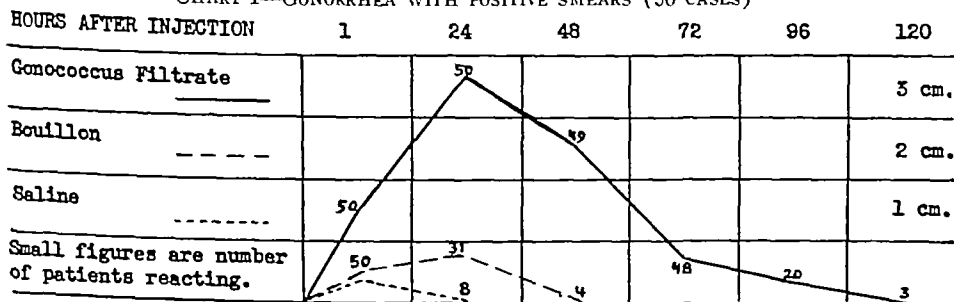
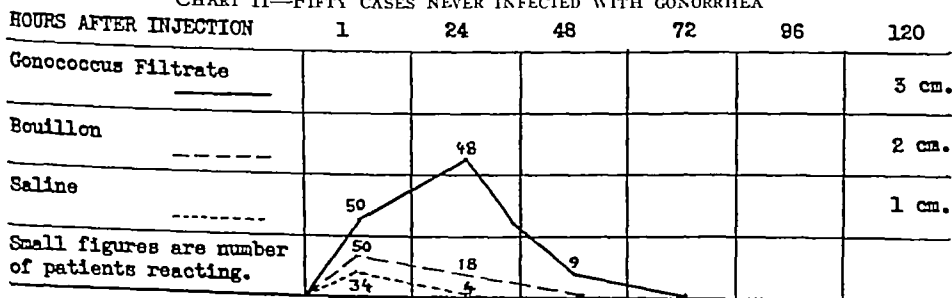


CHART II—FIFTY CASES NEVER INFECTED WITH GONORRHEA



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LOVE LAUGHS AT LAW SMITHS

The Montana doctors warned the law-tinkers at the state capitol, it seems, not to pass their brass-bound marriage law, but the legislators thought they knew it all and threw the doctors' advice out the window. Now they wish they hadn't. They were trying to keep up with the procession of states that require medical certificates of fitness for wedlock, and evidently thought that while they were doing it they might as well get the jump on the rest and leave the procession a mile behind. For marriage is not what it was in grandpa's day.

It used to be that a minister, a willing couple, and a ring were the only prerequisites for a first-class wedding. Seldom did a physician get tangled in the process, except as a groom or guest.

But times have changed, says *Medical Economics*. Today more than half the states have statutes which bear directly on the physical fitness of those about to marry.

In some of these states,* physicians are as essential to wedlock as are ministers and ritual, court clerks and licenses. Brides and grooms alike must prove their freedom from venereal and other diseases by producing a certificate signed by a licensed physician. Provision is made for a fee of from three to five dollars, varying with the state.

This year Montana felt its lack of a fit-to-wed law. It went the limit, there-

fore, and enacted one (effective July 1) which demands that a doctor certify every prospect for marriage license as being *entirely* free from infectious, communicable, and inherent diseases. Immediately people ceased getting married in Montana. No physician would issue the type of certificate required and run the risk of being discredited afterward, when some latent disease, not apparent at the time of the examination, cropped up again. Patients were advised to wed in other less stringent states.

Montana doctors criticized their legislature freely for not consulting the state medical association before enacting the "gin marriage law."* For a while after it was passed it looked as though the state would remain weddingless.

But love found a way. A moth-eaten statute was dug up which permits contract marriages. Now nuptial-minded Montanans merely file a joint statement with a court clerk, promising that they will "love, honor, and obey." And, quick as an official stamp can be applied to the document, they're man and wife.

As a result, people are now flocking to Montana from neighboring states and from Canada to get marriage contracts. Diseased or clean, they may wed freely. The state that tried to do a medical job without medical advice is worse off than it has ever been.

*Notably Alabama, Louisiana, North Carolina, North Dakota, Oregon, Texas, Wisconsin, and Wyoming.

*Expected to reduce the incidence of gin-inspired, hasty nuptials.

DIAGNOSIS AND TREATMENT OF ACCIDENTAL POISONING IN CHILDREN

JOHN AIKMAN, M D , *Rochester*

In 1930 I read a brief article¹ before this section on the incidence of strychnine poisoning in the United States. A more complete report was later published² in the *A.M.A. Journal*. Attention was here called to the menace to children brought about by the use of strychnine in bright-colored, sugar-coated cathartic and tonic tablets which are commonly purchased by the laity and frequently left within reach of the runabout child. It was pointed out that one-third of the deaths from accidental poisoning in children under five years of age were brought about by strychnine. Since then there appears to have been a reduction in deaths from strychnine but accidental poisoning still produces many unnecessary deaths. The problem of the management of these accidents is brought about by the multitude of articles that may be taken by children about the home and farm, also by the ever-increasing number of new drugs and poisons that are constantly being introduced. The subject of poisoning and its treatment dates back to earliest time, but modern chemistry has added to the problem more than to its solution.

The direct experience of any physician in the management of poisoning in children is limited, and the advice to be found in text books proves useless when some new and heretofore unknown poisoning is encountered. Our knowledge of modern chemistry and toxicology is also limited, especially after a few years out of college. While one will occasionally see groups of one type of poisoning, the cases are likely to be scattered.

Through the advice and encouragement of Dr. Joseph Brennemann³ the writer has attempted elsewhere to list the poisons that may be taken, the outstanding symptoms and such treatment as has been found of value. Repeatedly, poisoning occurs from articles that we have not considered and reports of such cases will be appreciated. All new and

unusual forms of accidental poisoning should be reported in medical literature.

The incidence of accidental poisoning in small children as well as the wide range of poisons that may be taken about the home and farm has already been presented,⁴ but very little was said about diagnosis and treatment and it is this phase of the subject that we will here consider.

We know that mortality rates do not show the true incidence of accidental poisoning because simple and non-fatal cases of poisoning frequently occur in the practice of physicians. While it is impossible to estimate the number of cases of poisoning that are never suspected or detected, the number must be very high. This is especially true in severe acute illness or in cases of sudden death. Zangger⁵ quoted by Pfandler and Schlossman states that only twenty per cent of poisonings are recognized. The other eighty per cent are either missed entirely or recognized too late for treatment.

As most of the children are too young or too frightened to give correct histories the most important item in the history is missing, and unless the physician has acute poisoning in mind the illness or death goes down unexplained or is covered by a blanket diagnosis such as acute gastroenteritis or bronchopneumonia—and the truth is never known.

With a history of the accidental ingestion of poison, the diagnosis is ready made and treatment is the only problem. Sometimes even the parents fail to remember or to be impressed with the fact that the child has three hours before taken a number of pills intended for adults. This was shown in one of our cases of strychnine poisoning. Few poisons give a clear clinical picture. If the possibility of poisoning is kept in mind a solution may be found to very peculiar cases that are first considered as infections.

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CHART III—GONORRHEA WITH POSITIVE SMEARS AND OTHER INFECTIONS (16 CASES)

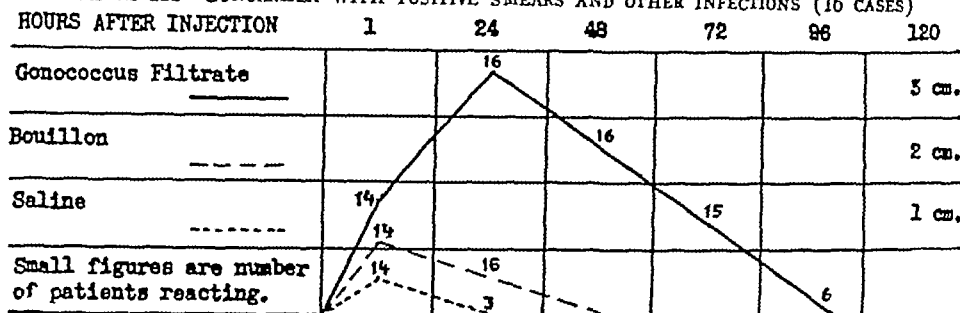
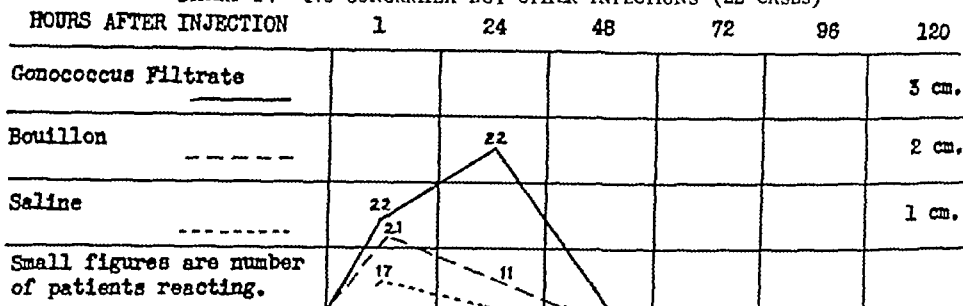


CHART IV—NO GONORRHEA BUT OTHER INFECTIONS (22 CASES)



average of 2 cm of reaction forty-eight hours after injection

The question arises as to whether or not other infections might not intensify the reaction in cases infected with gonorrhea. Such was not the case as Chart III will show.

Chart III includes sixteen cases having gonorrhea with positive smears and with other infections present at the time of the test. Among these infections were the following:

Six cases of syphilis, four injuries with infected wounds, two incised abscesses, two chancroids of penis, and two carious teeth and chronic tonsillitis.

In this chart all of the sixteen cases show an average of 2.32 cm of reaction forty-eight hours after injection which compares favorably to Chart I.

The possibility of other infections having an influence on the value of this test as a diagnostic procedure was immediately suggested, but Chart IV shows that there is no apparent influence from other infections when a gonorrheal infection is absent.

This chart includes twenty-two cases never infected with gonorrhea but having other infections at the time of the test. An occasional case has more than one diagnosis, as follows:

Five cases of acute bronchitis, three acute appendicitis, five fractures, four syphilis, one phlebitis, one carcinoma of the stomach, one corneal ulcer, three acute tonsillitis, one peritonitis, two osteomyelitis, and two peptic ulcers.

In this chart fourteen per cent of the 22 cases show an average of .07 cm of reaction forty-eight hours after injection.

Conclusions

Gonococcus filtrate (Corbus-Ferry) has a definite value as a skin sensitization test for gonorrhea.

It is not particularly influenced by the presence or absence of other infections.

In this series of cases there were no false positive nor false negative tests.

300 W 54 St

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hair and while this was being removed in the accident room, he suddenly lost consciousness. The interns were at loss for diagnosis until the matter was cleared by the chief resident physician who recognized poisoning from carbon tetrachloride used as a solvent for the tar. Carbon tetrachloride is used in industry as a solvent for gums, resins, and fats, in cleaning solutions such as "carbona," and also for dry cleaning. "Tetra" is sometimes used for drying hair after shampooing. It is employed as a fire extinguisher under the name Pyrene. Carbon tetrachloride is of value in the treatment of hookworm infection. When inhaled it produces irritation of the mucous membranes and bronchopneumonia has followed. It is both a circulatory and respiratory depressant. It will produce anesthesia and is twice as toxic as chloroform. Severe poisoning has resulted when exposure to the fumes has occurred in dry cleaning, and its use as a fire extinguisher especially in unventilated places has caused serious results. Very marked liver degeneration occurs in severe poisoning.

Intoxication from alcoholic beverages may occur in children even to the point of coma. Gasoline or its vapors may produce nausea, inebriation, coma, convulsions, cyanosis, and death. The odor of alcohol or gasoline assist here in diagnosis. Barbituric acid derivatives have a widespread use in self-medication and may be accidentally taken by children leading to unexplained unconsciousness, the same may be said regarding other sedatives and of derivatives of opium.

While convulsions are characteristic of strychnine poisoning, overwhelming amounts of other poisonous agents will also produce convulsions. Pyrethrum, sodium fluoride, arsenic, camphor, gasoline, kerosene, volatile oils, poisonous plants, and innumerable drugs have caused convulsions. While we were suspicious of poisoning in one case of strychnine poisoning, it was not until the mother finally recalled that her child had three hours before eaten cathartic tablets that we knew definitely with what we were dealing. The convulsions were not characteristic enough to make differential diagnosis from severe toxic convulsions accompanying gastroenteritis,

pneumonia, etc. In the typical case of strychnine poisoning from eating cathartic tablets, belladonna is also present and may produce a high temperature, as in one of our cases, to still more confuse the picture. After seeing such cases one wonders how many cases of unexplained deaths from convulsions may have been due to similar poisoning.

Children unconscious or in convulsions give no histories, and likewise, histories from frightened children between one and three years are unreliable. Older children guilty of misdeeds are apt to avoid rather than assist you to the truth. All of these may throw us from the right track.

Cyanosis is always an alarming symptom to both parents and physicians. When it appears suddenly and unexplained in children who have previously been well, poisons must always be suspected. The methemoglobin cyanosis produced by acetanilid and phenacetin has been recognized for years, but we are less familiar with the same type of cyanosis produced by many of the benzene derivatives which are widely used as solvents for gums, resins, fats, shoe dyes, and other dyes. They are used in cement for shoes, for auto top dressings, shellacs, varnishes, quick drying paints, rubber cement, stains, and dyes.

In April 1935 a girl of four years of age living near Kodak Park was seen to be very cyanotic. On examination I suggested poisoning from some benzene product. The father and mother were both chemists and assisted in searching for the cause. The mother had noticed a strong odor about the home but thought that it was from some chemical being used at Kodak Park. A coat that the child had been wearing was brought in. The coat and especially one sleeve gave a strong chemical odor. For a time we thought that the poison had come from a bottle of shoe dye remover that a neighbor had thrown in an ash can. Some time after the child recovered, the father discovered that a small bottle of anilin had been spilled in his chemical cabinet and decided that the child had here obtained the poison.

Two interesting types of poisoning with cyanosis have been noticed in children. *Laundry marks* on diapers have caused anilin poisoning when these diapers have been placed on the skin. Thirteen out of thirty-two infants in one

Neal⁶ recently reported three fatal cases of thallium poisoning that were at first diagnosed as encephalitis following chicken pox. The diagnosis was confirmed by spectroscopic examinations.

I am sure that one fatal case that I diagnosed as gastroenteritis several years ago was in truth arsenic poisoning due to a small child eating rat poison placed in the garage. Examination of the vomitus would have saved a great deal of trouble. Arsenic is found in various rodenticides, paint, fireworks, fruit sprays, and is quite widely used in medicine. The symptoms occur from one half to one hour after ingestion of the poison and can easily be mistaken for gastroenteritis or so-called cholera infantum. Stomach contents, stools, and urine should be examined for the drug. Phosphorus which is also used in rat poisons and fireworks will give gastrointestinal symptoms two or three days after the poison is taken.

Sodium fluoride as used in various insect powders produces severe gastrointestinal symptoms. In unexplained puzzling diarrheas occurring in runabout children living in the country, mushroom poisoning must be considered, especially that due to the *amanita muscaria* or "fly amanita" or the ingestion of poisonous plants. Cathartics eaten by children may also produce severe and even fatal diarrhea. Wholesale poisoning by infected food is easily detected by the group character of the accident. Nicotine widely used as an insecticide in gardens and green houses, said to be found in "Nico Fume liquid" and "Black Leaf 40" will produce gastrointestinal symptoms, but it also produces dyspnea, collapse, and coma.

In sudden and overwhelming collapse poisons must be considered. One of my patients went into sudden collapse and nearly died in his father's camp from eating some poisonous plant. Prompt lavage by a physician also on vacation nearby, saved the child. As in so many of these cases, they were unable to obtain an accurate history from the small child and no chemist or botanist was available to assist in the diagnosis. Cases of sudden cyanide poisoning in children have been reported from Western states. These children have crawled under tent-like

coverings where hydrocyanic gas was being developed to kill tree insects. In cases of collapse and convulsions, one must remember that some drug may have been taken hours before and the symptoms delayed due to the nature of the poison or to hard insoluble pills.

When sudden loss of consciousness occurs poisoning must always be considered. A fourteen year old girl and three younger brothers, in an unconscious state, were recently brought to the Genesee Hospital at eleven P M from a neighboring town. Another child aged seven was found drowned in a bathtub of water with the older girl hanging over the side of the tub. The officers believed that the girl had, in a fit of temper, poisoned the whole family. To complicate matters a small amount of arsenic was reported in some of the gastric contents obtained from one of the children. The officers and newspaper men were too anxious to make a crime out of the matter. However it was fairly obvious that arsenic was not the answer. It was pointed out that a hasty diagnosis might result in embarrassment of physicians and officers and in possible grave injustice to the girl. As the parents ran a green house, nicotine was considered. Carbon monoxide was suspected, but without a complete history could not be diagnosed. On return to consciousness the fourteen year old girl gave a clear story of having noticed fumes from a leaking stove and confirmed our suspicions of carbon monoxide poisoning. Looking back the diagnosis seems easy. The cases were not typical and the history was one of poisoning with intent to kill. No one had noticed or reported any gas in the house. Spectroscopic examination of the blood would have been a great aid in diagnosis.

When patients are found in closed garages with running automobiles or in rooms filled with charcoal fumes, a diagnosis of carbon monoxide poisoning is easy. The case stated and similar interesting cases prove that carbon monoxide poisoning may cause a serious diagnostic problem.

A peculiar case of unconsciousness occurred in another hospital. A boy had been admitted with a scalp injury. A large amount of tar was found in his

minations of bone are of assistance in lead poisoning

In making a differential diagnosis great assistance may be secured from chemical and biological examinations of the vomitus, blood, and urine. The spectroscopic examination of the blood will detect methemoglobin, and carbon monoxide hemoglobin. Thallium and other poisons may also be so detected by the spectroscopic examination.

Treatment prophylaxis Therapeutic accidents can best be avoided by writing and then carefully reading all orders for drugs. This includes orders on charts, in order books or on prescriptions to be filled by the pharmacist. All directions for parents or nurses in the home should be written and explained with even greater care. Dangerous drugs should be approached by smaller than the desired dosage until the susceptibility and tolerance have been tested. If dangerous drugs like bichloride of mercury are to be used, only the amount necessary should be ordered. Bichloride and other poisons are a menace on the medicine shelf.

Medicines should be kept well out of the reach of children. Drugs should be covered or well-corked. Left-over medicines should be thrown away and parents should be advised against keeping dangerous drugs in the medicine closet. Drugs such as bichloride of mercury, phenol, etc., should be distinctly marked "poison." Bright-colored sugar coatings are dangerous on any tablets containing poisons as they are so frequently mistaken for candy by children. This is especially true of cathartic tablets such as Hinkel's cascara, A B S, or A B S and C pills. They cause more fatal accidents in infants than any other poisons.

As has been stated the majority of accidental poisonings occur in small children just able to run about. The general tendency to put all things in the mouth and to mistake poisons for food or candy lead to these casualties. Nearly all such occurrences are due to carelessness on the part of some adult. General education of the public would prevent a portion of these, but the human factor must always be considered when poisons are kept about the home or farm. Rigid laws requiring the proper labeling of all poisonous articles, marking them as Poisons,

is the best safeguard. Dangerous poisons should never be used when non-poisonous articles will accomplish the same result.

Active treatment Active thorough treatment should be started at once, parents should be advised over the telephone regarding emetics such as powdered mustard in warm water to be given before you reach the case. Removal to the hospital is often of great advantage. Lavage by stomach tube or catheter should be thorough and repeated. Caution must be observed in poisoning with acids and alkalis also with children in convulsions. We have seen one child die in convulsions as the tube was being passed. Today the immediate intravenous use of luminal sodium, amytal sodium or other soluble barbiturates might prevent such a death. Advice regarding treatment for some new poison may be difficult to obtain. Latest advice regarding more common poisons should be available for immediate use, especially in hospital emergency departments. Mimeographed outlines like that prepared by Hanzlik¹² for the San Francisco Department of Health gives such instruction. Such an outline can be easily replaced or changed when necessary.

The administration of solutions containing sodium bicarbonate, potassium permanganate or animal charcoal may be of assistance and can do little harm. In poisoning with heavy metals, sodium thio-sulphate (U.S.P. sodium hyposulphate) commonly known in photography as "hypo", one to ten gm in water may be safely used.

Man has always sought for and believed in antidotes, but such agents are mostly of questionable value when overwhelming amounts of poison have been taken. Recent conflicting reports regarding the value of methylene blue in carbon monoxide and cyanide poisoning and in the use of sodium formaldehyde sulphoxylate in mercury poisoning are confusing. In any case of poisoning the amount taken, the susceptibility of the patient, and the amount of the poison absorbed before lavage must be considered when records are reported.

In profound poisoning artificial respiration, oxygen carbon dioxide inhalation and repeated transfusions must be kept in mind.

maternity nursery were so poisoned ⁷ all recovered *Black shoe dye*⁸ containing either nitrobenzene or anilin has produced poisoning in older children when shoes recently dyed black have been worn for a few hours. It seems only necessary for the fumes to come in contact with the skin. The marked general cyanosis that occurs due to the formation of methemoglobinemia is very alarming until the cause is found. Infants are apathetic, gasp for air, and may develop collapse and even convulsions. Headache, chills, general weakness, vertigo, somnolence, nausea, and even stupor occur in older children, and even death has been reported. Recovery, however, is the rule. Poisoning has resulted when nitrobenzene has been given by mistake instead of oil of bitter almonds. Unfortunately nitrobenzene is sometimes called artificial oil of bitter almonds, thus causing confusion.

Benzene products as used in moth poisons also produce cyanosis. Such a case was seen by Dr Marion Morse of Endicott, N Y.⁹ A child after eating parachloronitrobenzene became severely prostrated and cyanotic. This product is sold without warning as to danger and information regarding treatment was not available. Repeated transfusions were given but the cyanosis due to methemoglobin lasted several days before recovery. Oxygen was also administered. Moth preventatives of this type are widely used. Cyanosis due to nitrite poisoning may sometimes occur after the administration of bismuth subnitrate.

A chapter could be devoted to the skin rashes produced by drugs. As these usually occur from medication the diagnosis is not difficult. However, we have all seen erythema, dermatitis, and other conditions that were very confusing until an idiosyncrasy to drugs being administered was discovered. Atropine, barbituric acid derivatives, salicylates, bromides, phenolphthalein, and other drugs frequently cause embarrassment.

Atropine in itself is annoying in other ways, as it is widely used in the treatment of children, and mild cases of poisoning frequently occur. The flushed skin, fever, rapid pulse, dilated pupil, and dryness of the throat quickly pass if the drug is discontinued. Very high tem-

peratures may occur, as high as 106°F in one case. We have seen extreme abdominal distension, very rapid respirations, and marked discomfort in small or newly born children who have received too much atropine. We also saw seven fairly severe cases of poisoning in school children who had been poisoned by atropine prescribed by mistake for homatropine for use in the eyes. They had mild delirium, and all recovered. Within the last year a child was seen for sudden and unexplained dilatation of one pupil. Use of atropine was denied. An ophthalmologist was so certain that atropine had been used that the parents recalled that the child had handled a cork from a bottle containing some medicine for vomiting. This medicine was atropine. Atropine poisoning may occur in dispensary practice when the drug is ordered in both the pediatric and eye clinics. Poisoning may result from cathartic tablets when atropine or belladonna are combined with strychnine as in A B S, or Hinkle's pills. The berries of deadly nightshade may produce serious poisoning.

The development of respiratory symptoms may sometimes be traced to inhalation of powders such as zinc stearate or inhalation of strong acid fumes. Warning¹⁰ reported a high incidence of bronchitis and pneumonia in twenty-three cases of kerosene poisoning. Nose drops containing menthol have also produced respiratory symptoms such as choking, dyspnea, and cyanosis. Unexplained nephritis may be due to poisoning.

The improved methods for estimating the lead content of blood, urine, and hair reveals a much higher rate of lead poisoning than has previously been suspected.¹¹ The ultimate effects of small doses of lead result, we are told, in many obscure symptoms that are now being missed by the medical profession.

Various syndromes may be associated with "subchronic" lead poisoning. Symptoms are extremely variable and may stimulate mental disease, acute peritonitis, gall-bladder disease, and renal colic. Early symptoms are anorexia, nausea, weariness, constipation, headache, eye-symptoms, and circulatory manifestations. Careful laboratory examinations for lead poisoning should always be considered in the study of obscure cases. X-ray exa-

AN OLD REMEDY BOOK

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Practicing in the country town of Elbridge, N Y, one hundred years ago was a doctor by the name of David Wilson On February 11, 1834 he turned to the first page of a notebook he had just purchased, and began a series of entries The first notation is of a remedy for cough in tuberculosis, the last, in 1859, is a formula for the preparation of pickled ham! A survey of some of the items listed in this remedy book gives a cross-section of the pharmacopeia in use a century ago in central New York.

For consumption, take a piece of double refined loaf sugar as large as a walnut, drop one drop of spirits of turpentine [sic] upon it, and take it in the morning fasting Increase one drop every morning till nine mornings if the stomach will bear it, then skip nine mornings Commence again and take it as the stomach will bear, every day till the cough abates

For cough, take maple liverwort—that which grows on soft maple. Steep it in vinegar or water, and sweeten with loaf sugar Dose as much as the stomach will bear

For jaundice, take hog's gall and steep it in spirits Dose one tablespoonful three times per day

For contracted sinews from rheumatism, take the marrow of a horse's bones and oint the patient with it and wrap him up in blankets

For swellings and inflammation from wounds or bruises, take chestnut tree leaves and sweetapple tree leaves and boil or steep them strong in water, then apply them to the parts affected as warm as the patient bears, also wash the parts with the tea warm Continue to apply the leaves hot and rub the part with the tea till the swelling and inflammation abate, then dress the wound with simple salve or ointment.

For diarrhea, take common puff balls and stew them in fresh butter or beat them up with eggs and bake them, or steep them in water or brandy

Two cancer cures are listed take balm of gilead leaves, beat them fine and apply them as a poultice, or take mutton suet, add to it one teaspoonful of the filings of pure brass, apply the mixture as a plaster to the sore, and keep it on till it heals To the latter prescription a notation is added *This has never failed*

A prescription for scalds and burns which was borrowed from one Dr Little is prepared as follows Take one lb of lard, one ounce of sulphur, one tablespoonful of tar, one teaspoonful of pulverized verdigris, and mix them well together cold. Apply the ointment to the burn with a feather and do not wrap it up with clothes or bandages

To make castor oil palatable for children, take the quantity you wish to give, boil this a few minutes with the same quantity of milk, then sweeten with a little sugar and stir

For swollen breasts, take one lb of rosin, one-half lb of bee's wax, one-quarter lb of mutton tallow, one tablespoonful of black pepper Melt these together without burning When melted pour into cold water, then work it into equal parts of British oil, turpentine, and spirits of camphor

A diebetic [sic] pill is compounded as follows Phosphate ferri, one dram, pulv aloes, twenty grains, gum arabic, q s Make into twenty pills Dose 1—3 times per day

For a fever sore he recommended crocus martis, two ounces, sulphas zinc, one ounce, in two quarts of rain water The following was efficacious in dyspepsia sulphate soda (Glauber salts), six ounces, epsom salts, eight ounces Dry them in an oven till the water of crystalization is entirely evaporated, then powder finely with two ounces of carbonate magnesia, and keep stopped closely Of this, one teaspoonful was dissolved in water and taken in a gill of lemonade two or three times daily

The prescription of Dr Reese for cholera was used by Dr Wilson It contained sulph. ether and compound spts of lavender, of each one ounce, tinc of opium, two drams, oil of cloves, ten drops Dosage one teaspoonful for an adult, for children in proportion To be repeated as often as necessary

A vermifuge was comprised of castor oil, eight ounces, wormseed oil, one and one-half ounces, spts turpentine, two drams, carbonate soda, one-half drams Dose one teaspoonful once an hour

A formidable formula for a panacea contained no less than twelve ingredients

Tincture of opium, one gill
Liquorice, dissolved, six gills
Tincture of anise seed, one gill
Tincture of camphor, one gill
Tincture of elicompani, one gill
Solution of sal tartar, one-half gill

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Discussion

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—It is difficult to add anything to so complete a study of poisoning as that which Dr Aikman has made. His paper, however, contains several suggestions, the value of which may well be emphasized.

The importance of the proper labeling of poisons cannot be overstressed. I learned my lesson years ago before I became a "compleat" pediatrician. An adult to whom I had given a $7\frac{1}{2}$ gr tablet of bichloride of mercury, dissolved it and drank most of the solution. It had been carefully labeled as poison with the directions to use externally and I am willing to admit that my first act upon learning of the accident was to secure, for evidence, the properly labeled envelope. Fortunately the solution had been taken immediately before a breakfast of four eggs which if undercooked may have had something to do with the favorable outcome.

Drugs to be valuable in treatment must be potent and probably all of us in practice frequently prescribe those which if taken in overdose might prove dangerous, hence it has been my custom to carry with me on my daily rounds labels to be attached to every glass or bottle left with a patient. Such a procedure may occasionally cause suspicion but the drinking of a glass of clear solution mistaken for water has occasionally occurred. The warning may read "Dangerous in overdose" rather than "Poison."

Dr Aikman calls attention to the danger inherent in the sugar-coated pill and preparations designed to simulate candy. While writing this, I received a telephone message that one of my patients had eaten a number of sweet and flavored calomel tablets left for her brother and which she had heard me inadvertently call candy. She needed them but I confess guilt of the methods I criticize. Attractive and palatable liquids may be as dangerous. We have records at the Ellis

Hospital of poisoning due to cheracol and oil of wintergreen.

In my opinion palatability should not be considered in connection with medication even in the child. From early life, children should be made to realize that the bad must be accepted with the good. With the right attitude upon the part of the parent or nurse bitter medicine is as readily taken as sweet. I have never found any difficulty in giving castor oil without orange juice. An appetite for medicine should not be encouraged, nor can unpleasant taste be depended upon as a safeguard. It is astounding what children will eat and drink. I have known a little youngster to eat a cake of bluing and I have had a patient whose mother could not send her to the drug store for castor oil because she would drink it before she got back. Some children are said to love castor oil. We have a hospital record of the death of a child of $5\frac{1}{2}$ years after drinking the greater part of a pint of whiskey and some anisette. This means that dangerous preparations, whether camouflaged or not, should be kept out of reach of children and to do so, the cooperation of the family physician may be required.

The difficulty of obtaining satisfactory histories in children has been discussed. It must be realized, however, that the fact that the problem is put up to the physician is sufficient evidence of the possibility of danger and justification for lavage at least. Failure to institute treatment because of uncertainty may be fatal. I have had such an experience a child seen by another physician who was apparently not impressed with the story, died in convulsions five hours after he was first seen. He had evidently, as the mother feared, swallowed some of the sugar-coated pills containing strychnine against which Dr Aikman has warned. Even if the preparation may be not known to be dangerous the psychology of a stomach washing may be a warning not to repeat the procedure.

A Utica paper recently by a slight slip printed the intriguing news that "plans for the year will be made by the material welfare committee of New York State Medical

Society here tomorrow."

If the State Society ever has a "material welfare committee," many will wish them quick action and good luck.

scorn. There were endless quarrels "He was a lazy, incapable, good-for-nothing person, who should not have married if he could not feed his three children and should not have taken a girl away from a decent home where she had plenty of better opportunities"—All the good, comfortable years were forgotten.

The children, who used to be chummy with him, were taught to shun their father and to laugh at him. They were left more and more with their grandmother while mother disappeared from the house for several hours daily and later nightly.

Patient did his best to find a job, but to do that was difficult and when he did land one—he became a clerk in a dry goods store—it was too late for his rehabilitation. Wife, children and mother-in-law had disappeared. He knew who had replaced him, but could never find out where they had all gone. What were his complaints?

"Nervousness, shaking, aches in various places, impossible to concentrate, crying without any reason, unable to work."

"The boss sends me away, saying I am too nervous. Doctor, I cannot go on like this. Something must happen. I keep on thinking, Where are my children? Why can't I be with them?" he said with an expression of infinite sadness.

His physiognomy was that of the typical hypochondriac.

For four years he had not gone to a

movie, had not read a newspaper, had seen but few friends and at rare intervals.

He was convinced that he was suffering from some physical disease, although all the physicians—general practitioners—under whose care he had been had told him there was nothing the matter with him. Examination, indeed, showed no evidence of organic pathology. Basal metabolism, upon which he insisted, was also normal.

Sexual intercourse? Yes, he had had it two or three times, but it was due to the urge of a woman, an old acquaintance from his boyhood days, now a widow, who wanted to live with him. He could not make up his mind and was rather cool to her proposal.

Consolation was out of the question. Nor would it have been fair, he was entitled to his sorrow.

However, there was the remedy. His boyhood love or semi-sweetheart.

Encouragement in that direction, assurance about his somatic normality, and rationalizing talks with a view of giving him a new philosophy of life and changing his viewpoint as to what was really worth while, gradually improved his condition. Teaching him to relax from his tenseness was successful and helpful. To be sure, he was not cured, but he could smile again and live with his new woman who accepted him as he was, and work. He ceased complaining.

Down and Out

A man of forty, married and having two children and living with his family. He was seen at the height—or depth—of the economic crisis, around 1932, when even home relief did not exist or was difficult to get.

He had been strong and healthy until a few months before, when the last of his savings had gone. He had had several occupations. Originally a coal miner, then a labor leader, at the head of his local in the trade union. Later he was an office worker and had some other jobs which I have forgotten. Recently he had been drifting, trying to make a living, but failing. Finally he was peddling various objects on ships, attempting to sell them to sailors.

He had studied in a well-known labor college and used to be very sociable.

But now, he was uninterested in anything, brooding the whole day, sitting in the house, without the least will power. He was not even able to worry, although "rent" seemed to have remained a deterrent, as at its mention, he would become panicky with fear.

He came with his wife. When asked what seemed to ail him he said his legs were weak, he had lost weight and mentioned a number of incoherent complaints. But she gave better information. He could not sleep, didn't care about anything, was "nervous," sad, refused to eat, or to go out, or to see friends. Since she had found some odd jobs for herself the situation was somewhat less desperate. But he could not attend to the children, therefore she didn't dare to leave the house. Moreover, she was afraid he might do some harm to himself.

Bad as the condition seemed in this case, the success of the treatment, consisting of conversations, was surprisingly rapid. The patient, stunned and humiliated by his inability to earn a living began to trust and believe the doctor, regained confidence in himself, which enabled him to renew his old connection and look for work. While this did not solve his problem entirely, as his first earnings were scant, it was a good start. He has been well ever since.

Tincture of balsam tolu, one gill
Loaf sugar, six ounces
Water of horehound, one pint
Emetic tartar, two scruples
Tincture Bloodroot, one gill
Tincture of myrrh, one gill

Mix the whole together and it will be fit for use. Dose for an adult, from $\frac{1}{2}$ to one teaspoonful $\frac{1}{2}$ hour before meals

Other formulae were for physic pills, colic pills, piles, tonics, bitters, itch ointment, dentrifice, and cold wash Intermingled

also with veterinarian remedies were assorted directions for the preparation of white paint, mead, cream soda drink, and beer He listed a decoction to destroy bed-bugs, and a formula for a laundry powder, and he concluded with the aforementioned method of pickling ham The remedy book of Doctor Wilson shows him to have been a family physician in more than the usual sense.

43 MAIN ST

BETWEEN MENTAL HEALTH AND MENTAL DISEASE

B LIBER, M D, D R P H, New York City

Editorial Note Under this title will appear short summaries of "transition cases" from the service of this author in the New York Polyclinic Medical School and Hospital The descriptions are not complete clinical studies, but will accentuate situations from the point of view of individual mental hygiene such as crop up in the every day practice of medicine

A Little Genius

A mother brought her little boy of four because he was "nervous," full of temper, restless in his sleep

He was a very slim and extremely vivid child I had seen him once at his home, ill with some children's disease, in a dark room in the rear of a house, the door opening on a stoop in a narrow courtyard I remonstrated with his mother for living in such rooms, which were bad for the entire family, but especially for the child At that time she explained that, in a decent neighborhood, that was all she could get for the low rent she was able to pay However, as she told me later, my threats of future calamities had had effect and she had moved away to better quarters, although in a poorer section

But this time the child was tortured in another way This mother had great ambitions for him, her only one She had heard about the famous violinists who had begun to study in their childhood and she was sure that he too would achieve success if he started early So he took lessons and she saw to it that he practiced for long hours daily Even to our consultation she carried his violin, as they were both coming from the appointment with the teacher

The boy had but little leisure and rarely played in a childish way, except with his mother She claimed that the other children would spoil him, would drag him down from the high pedestal upon which she had placed him As if that was not enough, she had obtained for him an engagement on the radio where he would recite once weekly and would be paid five dollars The mother coached him the whole week and made him speak sentences and words which he did not understand

There was great danger both for the mental and the physical condition of this child The most eloquent language of which I was capable could do no justice to the seriousness of the situation. But my talk was inadequate and unconvincing, at least to this mother She continued to work her child until worse symptoms developed

His fits of anger were more frequent and lasted longer He refused to eat even those foods of which he used to be fond

Then only the mother gave up her plans and freed the child As soon as he was allowed to play with other youngsters and had none of his former worries, he began to improve. Within a few weeks he was cured

Humiliation

This is a simple story of a man who was unhappy because he had been humiliated from many sides It was more than an ordinary inferiority complex. It was a high degree or rather a bad form of maladjustment which began with his misfortunes Possibly some psychiatrists might discount the events in his life as of minor importance or as contributing factors only, in the causation of his mental troubles That he

always had a tendency to hypomania is indubitably true But from all the information that could be gathered he apparently went along smoothly until four years ago when the following things happened

He lost money and with it his business and his dominant position in the family

His wife, for a long time enticed by her mother, who "hated" our patient, now finally dared to throw at him all her accumulated

research and study goes to Drs Kimball and Gudakunst, but without an intelligent physician in the key position of the Detroit Board of Education this work would have been impossible.

We congratulate the city of Detroit on the wisdom which selected a man of Dr Burt R Shurly's standing and attainments to be at its educational headquarters. Were more such men in key positions their influence and guidance might make more acceptable the proposals of sociologists generally.

An Invaluable Precedent

Medicine is not alone in welcoming the outcome of the State's action against the Life Extension Institute in New York City. By upholding the statutory ban on the practice of medicine by corporations, however well-intentioned, the decision strengthens similar prohibitions in other professions. Interdiction of physical examinations by the Institute, even though unattended by treatment, shows that it is not necessary to perform all the acts pertaining to a profession in order to come within the meaning of the law, performance of a single professional act constitutes professional practice.

The precedent set in this particular case will go far to maintain the integration of all professions and individual responsibility therein. In law, as in medicine, private practice has suffered greatly from corporate encroachment. Title companies, government agencies, have taken over many lucrative branches of the law, with the result that qualified members of the bar are denied the economic opportunity that should be theirs. This destruction of the normal incentives stifles initiative, inhibits the constant striving for self-improvement which is essential to high professional standards, and drives many with the requisite mental and moral qualities into more lucrative pursuits. What is true of the law in this respect is equally applicable to medicine, dentistry, and other professions.

It is not to be assumed that the decision

in the Life Extension Institute case will operate solely to the profession's advantage. There is nothing in the service rendered by such corporations that cannot be done at least equally well by the private practitioner, either at his office or, in complicated cases, in the hospital. As a matter of fact, it is universally conceded that the health examination has the best chance of eliciting significant data when it is performed by the family doctor, who is familiar with the patient's heredity, past medical history, and social and economic environment.

Discussion of this case is incomplete without a word of praise for the fair attitude maintained throughout by Referee John Caldwell Myers, Deputy Attorney General Ullman, and the attorneys for the Life Extension Institute. In an action to uphold basic provisions of the medical practice laws, they have displayed a high degree of legal conscience and public spirit.

A Formidable Enemy

Rises in the mortality from diphtheria warn the profession that this dragon of childhood is momentarily subdued but not conquered. When immunization is pressed diphtheria morbidity rates drop—under favorable conditions actually to zero. As soon as vigilance is relaxed, its incidence increases.

Physicians should not wait for health departments and welfare agencies to launch periodic drives for diphtheria immunization. It is the contention of organized medicine that every practitioner is a health officer, at all times fighting in the front lines. It should not require spectacular campaigns to persuade him to take the offensive against a preventable disease. Every medical man should consider himself responsible for all the children in all the families in his care. He should suggest inoculation at the proper time, and, if parents hold back, explain the rationale of prophylaxis and the danger inherent in its omission.

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EDITORIALS

A Doctor's Influence on an Educational Problem

It has always been our contention that when sociology and medicine meet, that medicine necessarily must take the leading role. Our antagonisms to propositions and schemes embracing medical problems advocated by other than those with a medical background and training were never aroused because they were proposed by nonmedical men, as by the fact that they demonstrated so little knowledge of the medical viewpoint. Therefore we are wont to advocate not only the integration of medical opinion in all these schemes, but actually to agitate for the leadership of medical men in them.

A case in point is that of Dr Burt R Shurly of Detroit. He is no politician, nor office seeker. He is a very eminent physician who has had signal honors paid him by professional and academic societies. Knowing the needs, and anxious to help, he accepted a position on the Board of Education of Detroit. Today, in the published announcement of the results of a study on educational and therapeutical aspects of epilepsy among school children, by Drs Kimball and Gudakunst,¹ the work of a good medical man on a sociologic problem again finds justification.

Briefly, Shurly made it possible to collect all the epileptic children of school age in one central school. They were collected at their homes and returned to them. They were intensely studied while in the special school, and the factors of heredity closely elicited. They were subjected to a treatment based on the suggestions of Choroschko of the Metchnikoff Institute which consisted of daily intramuscular injections of two c.c of a ten per cent concentration in liquid form of lipoids from sheep brain, prepared for this work by the Parke, Davis and Company laboratories. The results were gratifying. Of one hundred and six so treated, 123 per cent were apparently cured, 50.9 per cent were definitely improved, and in 36.8 per cent no improvement was noted. Another fact was ascertained. For the six months that forty or more boys were kept together at school, they had sixty per cent fewer seizures per day at school than they formerly had had at home. Similar results were observed among a group of girls. It seems that for the majority of them, they are physically better off in school than at home, and it was possible to develop a special plan of education for them because the very nature of their disease prevents them from utilizing ordinary methods of education.

Of course, the credit for the painstaking

¹ Kimball, O. P. and Gudakunst, D. D. A Study of Epilepsy in Detroit, *Jour. Michigan State Med Soc.* p 641, October 1936

liquid petrolatum is absorbed and is stored in the liver where it produces a fatty infiltration¹ In addition, the continued ingestion of the oil tends to deplete the organism of fat-soluble vitamins

What bearing this has upon psoriasis is problematic Yet people suffering from this type of dermatological lesion have been known to exhibit pustular eruptions whose exudate was of oily consistency These patients all told of having taken large quantities of liquid petrolatum What is of added significance is that studies of the involution of psoriatic lesions have established the value of demineralization in the treatment of this disease

Final judgment cannot be passed concerning the relationship of psoriasis and liquid petrolatum The attention of the profession is directed to the published reports and to a reconsideration of the broader problem of the inertness of this drug

CURRENT COMMENT

"*LORD HORDER OPENED the discussion on the subject, 'The Strain of Modern Civilization,' before a large audience in the section of physiology of the annual meeting of the British Association for the Advancement of Science. He said that from the early days of the primitive curse life had always imposed a strain on mankind. That was the penalty we paid for living at all. There was, however, implicit in the title of the discussion the suggestion that the stress of modern life had new elements and was excessive. * * * Behind the screen of headache, indigestion and fatigue inquiry revealed the anxiety factor. In the sphere of microbic diseases we had new diseases for old. There was an increase of those more subtle germ diseases called 'subinfections,' in which the virulence of the microbe was low while the susceptibility of the host was high. In many of these the germ came from within and not from without.*

"As to the cause, it was almost platitudinous to speak of the anxiety connected with the competition of living and the equally grave sense of international insecurity, of the pace at which we lived and of the precariousness of life itself in the streets, so

that we seemed to live by accident rather than to die by it, of the monotony and drabness inherent in the long hours of physical and mental effort of many workers, of the exciting nature of our amusement, and of noise, needless, stupid, provocative. He would add another cause, more subtle but none the less recognizable, the slackening of the moral code in the sphere of increased freedom of both sexes

"* * * It is seldom that a physician makes a political pronouncement, and however eminent he might be, one from such a source would not receive much attention. However, what Lord Horder said has received widespread notice in the press. He saw little hope for the people through mass movements, whether Fascist or Communist. When individual freedom had been sacrificed he saw no chance of achieving that control in the spiritual sphere through which he believed salvation could come to the human race. What matter the color of men's shirts if these were soon to be their shrouds? 'A plague on both your blouses,' he said to the accompaniment of cheers. Concerning numbers, he was much more interested in the quality than the quantity of our people. When the clash came, if come it must, between two hordes of the new barbarians—civilized barbarians if they liked—it might well be that the salvaging of the world or its doom might depend on whether northern and western Europe and America had been able to preserve an individualized society or, like the two opposed masses in the dictator countries, had yielded to the tremendous pressure of what might prove to be a bastard civilization and had caught the infection of despair. If our own individualities refused to be tub-thumped or intimidated into a pulp, all might be well. * * * He could only state his faith in the individual and in the enormous potentialities of the human spirit. Was it not a handful of individuals who guided the vast experiment proceeding in the east of Europe, another handful that drilled humanity in the center, and one individual alone who balanced himself dramatically as on a tight rope before the breathless crowd of the South? If physicians had a political color, like lawyers, it must needs be Liberal. A rebirth of that spirit in British political life would be one of the best medicines that our strained lives could have administered to them."—From the regular London correspondent to the *Journal of the American Medical Association*, under date of September 19, 1936, in the October 31, issue of the *JAMA*

"No DOUBT you've heard it often—the argument intended to prove that state medi-

¹ Gaul, L. E. N. Y. STATE J. MED. 36 1219, 1936

This is a sphere of worthwhile, legitimate activity for the private practitioner, and one he cannot afford to neglect. For poor patients the immunizing serum is available without cost.

If physicians are apathetic about pressing immunization against diphtheria—a safe and proven prophylactic measure—they cannot complain if government agencies invade the field of disease prevention and make it their own. Once they are established there, the tempting domain of therapy is in plain view and easily reached.

The best way to avoid large scale state medicine is to keep to a minimum government health activities—preventive or therapeutic—involving actual ministrations by a physician to an individual. This can only be accomplished if the private practitioner recognizes his duty to wage an aggressive fight against preventable disease.

Induced Hypoglycemia as a Therapeutic Measure

In 1930, Sakel¹ reported on the use of insulin in connection with the treatment of morphine addicts. He noted that the hypoglycemic state, which developed despite the administration of carbohydrates, produced a quieting effect on the motor excitments observed during the withdrawal period. Upon extending this form of therapy to patients suffering from schizophrenic disorders a marked improvement was noticed following its use.

In general, the method of treatment consists of gradually increasing the stages of hypoglycemia until coma, and oftentimes epileptic seizures are induced. Needless to say, the patient must be hospitalized and scrutinously watched since this regime of treatment is not without danger. From the first phase, wherein increased salivation, twitchings, and profuse sweating are accompanied by a subjective sense of mental calm, the patient is brought into

the second or so-called "shock-phase." Here normal reflexes disappear, and the subject becomes comatose. Tachycardia, irregularities in respiration, and motor disturbances not unlike that of a decerebrated animal are evident. Convulsions of an epileptic nature often ensue. Following this phase, the administration of the shock-dose of insulin is lessened in frequency until schizophrenic and psychotic manifestations have disappeared.

Any hypothesis which at present can be advanced for the rationale of this therapy must be purely tentative. Glueck,¹ who states that eighty-five per cent of all "paranoid patients who had been ill less than six months recover their normal health" after repeatedly induced hypoglycemic states, feels that this is a type of cellular therapy which supplements the psychoanalytic treatment. The insulin shock puts the brain cells at rest and permits reparative processes to take place, while the pathological pathways are eliminated and the pre-psychotic tracts are regenerated. The role of the insulin-antagonists—the adrenal and pituitary—which are activated during the hypoglycemic state, may also play an important role.

Here is something to conjure with. It deserves extensive trial. Anything which holds out but a ray of hope for our charges suffering from what is now called functional insanity calls for a thorough investigation. It is even possible that other diseases may be found to respond to hypoglycemia induced by insulin.

Psoriasis and Liquid Petrolatum

No other drug has caught the popular fancy or become symbolic for "absolute safety" like mineral oil has during the past quarter of a century. Here, at last, was a "safe" cathartic because not only was it not absorbed by the body but it also was inert during its passage through the intestinal tract. From experimental data available, however, it seems that

¹ Sakel, M. *Deutsche Med. Wochensche*, 1930

¹ Glueck, B. *N. Y. State Jour. Med.*, 36 1473, 1936

Correspondence

[THE JOURNAL reserves the right to print correspondence to its staff in whole or in part unless marked "private" All communications must carry the writer's full name and address, which will be omitted on publication if desired Anonymous letters will be disregarded]

A Correction

In the October 15 issue of the Journal (page 1570), an error occurred

A list of the members of the Committee of Economics was published with their addresses, telephone numbers, and assignments to certain sections of the state in case of advice that might be needed for benefit of the society

Instead of Dr Frederick Stephen, it should have read Dr Frederick S Wetherell

A Protagonist for Socialized Medicine Speaks

929 Marcy Avenue
Brooklyn

To the Editor

In your Oct. 15, 1936 issue appeared an article entitled "The Country Doctor" (p 1538) Everyone knows that the New York State Medical Journal is a vast propaganda machine against Socialized Medicine, yet this "Country Doctor" article is the best article why we should have "Socialized Medicine" It is the most illuminating article in favor of it. It tells the truth, whereas your "On the Witness Stand" by J W Walch is chock full of lies

Sincerely,

NAT KANNER, M.D.

P S Print this in your next issue I dare you!
October 24, 1936

DOCTORS DO NOT WANT SECURITY"

Newspapers around the State are quoting under prominent headlines the statement of Dr Floyd S Winslow, President of our State Society, that the doctors "do not want to be secure. We want to remain insecure." He made this striking declaration in his address at Ithaca on Sept. 17 before the meeting of the Sixth District Branch To quote in part

We need to be told these things over and over again. The advocates of socialized medicine lure the profession with the siren song of bureaucratic jobs, assured income—security—false security We do not want to be secure. We want to remain insecure. We want to continue to be required to give our very best to every patient, or lose out in the gentlemanly competition which exists within our ranks This is an incentive that operates to our insecurity, but to the security of the patient. We prefer the discipline of private practice which keeps us on our toes, to an assured income under bureaucratic control where our highest ambition is more likely to be to keep ourselves solid with the politicians who have taken over the job of running our profession.

I repeat, security for the doctor means insecurity for the patient

And it cannot be too emphatically put that it is incumbent upon us, by the pursuit of such measures as these, to prevent those whose occupation is to talk about medical care, from inaugurating visionary proposals tending to prevent us, whose occupation is to provide medical care from keeping faith with our patients and with the public. We have been accused of thinking only of our bank accounts when we oppose compulsory health insurance. When did we ever think in terms only of our bank accounts? Where is there another profession which is so impersonal in its primary objects, working so surely, and so effectually, fighting every kind of disease, driving out of existence, if it were possible to do so, the very source of our income?

Today the American public is the recipient of the best medical care in the world, and I need not bother you with the statistical evidence that with few exceptions, our death rates are below all those countries where the doctor's activities have been painfully made the object of the state's beneficence.

(The full address will appear in a later issue—Ed.)

DOCTORS GET BOOTLEG MONEY

Word by wireless to the New York Times tells of a police raid the other day on the Cafe Edison, headquarters of the American Medical Association in Vienna. The head waiter and other employees were arrested

for illegal dealings in dollar notes, which were being exchanged at prices showing a big discount on the official rate for the schilling. It was stated that more than 100,000 schillings were exchanged at this cafe.

cine is the only logical way out 'Look at our postal service,' you are urged, 'There's a successful example of state socialism!'

"Well, let's really have a look! Postmaster Farley has pointed with pride to a \$5,000,000 postal service surplus. It sounds impressive. The only trouble is that the postmaster achieved this statistical feat by deducting \$70,000,000 for subsidies and free mailing privileges and by reducing the quality of postal service.

"Socialization—whether of the post office or of medicine—always seems extremely profitable and worthwhile, unless you are one of those skeptics who just won't take a fellow's word for it!"—This from William Alan Richardson in the October issue of *Medical Economics*. The following bit is from the same pen "Amid all the ballyhoo about socializing medicine, we have yet to hear of a plan that will take the indigent out of the lap of the profession. This phase of the medical-care problem is assiduously avoided by our reformers.

"Granted that groups of physicians in certain cases have been able to obtain some compensation from local authorities for the care of the indigent, satisfactory arrangements of this kind are few and far between. Furthermore, the fees afforded by them are pitifully lean.

"Instead of focusing their entire attention on the 'neglected' middle-class patient, those who seek a change in the present order might better give some thought to the charity question. There's a stickler that needs an answer."

"THE SCARCITY OF PHYSICIANS in public affairs indicates that medical men almost more than any other body of men take no active interest in the affairs of the nation and its governmental subdivisions. To be sure, there are a few who are active in public affairs, but physicians should realize that before any constructive health legislation can become a law there should be medical men—real physicians—men who have practiced medicine and know the difference between health and the lack of health—acting in the capacity of advisors.

"* * * It is not suggested that all med-

ical men should suddenly be seized with public spirit, for that cannot even be hoped for * * * Still, there are physicians—many of them—for whom business, due to their success, has become a secondary issue. As human beings these men now feel the desire to relax and enjoy the fruit of their labor. However, we can pray that perhaps one of these men—perhaps two or three—might sacrifice a little of their well-earned leisure to the public weal. A few doctors who possess intelligence, spirit, courage, which attributes the laity has been taught to believe inherent in all medical men, could work wonders in public work. These men, by actively entering the field of public affairs, could live down the accusation that politics is a 'dirty game.' Obviously, a little constructive medical legislation would dispel the vapors of bungling legislation which is being enacted by many legislators who are ignorant of the work being done in medicine. The successful doctor is the logical person to do this job"—From the *St. Louis County Medical Society Bulletin* of October 23.

THE AMERICAN HOSPITAL is the subject of an editorial in *The New York Times* of October 23, from which we quote in part " * * * Mr. Winthrop Aldrich, at a gathering of the trustees of private hospitals in this city * * * put these institutions (the hospitals) among 'the most precious things in our American life'—precious because the noblest of human virtues has here a highest realization. If it 'frets the saints in heaven' to see how many desolate creatures on earth have 'learnt the simple dues of fellowship in a hospital,' how much rejoicing there must be over the conscious and voluntary giving to make such social comfort possible.

"There are positive reasons for maintaining private hospitals, their benefit blesses both those who receive and those who give. There are also reasons negatively holding against the transfer of these agencies of human fellowship to public support and administration, lest one of those human values which determine the high degree of civilization be diminished or lost."

ARTIFICIAL SYNTHESIS OF VITAMIN B1

Announcement is made by Dr. R. R. Williams, Chemical Director of the Bell Telephone Laboratories, and Dr. J. K. Cline of the Research Laboratories of Merck & Company of the artificial synthesis of vitamin B1. Other important collaborators in the work have been Professor H. T. Clarke, Dr. E. R. Buchman and Messrs. R. E. Waterman

and A. E. Ruehle. The earlier work was done at Columbia University and the later phases at the Research Laboratories of Merck & Company. This development marks the culmination of twenty-six years of intensive experimental effort by Dr. Williams on this the first of the vitamins to be discovered.

Historical Article*

A HISTORY OF MEDICINE IN THE STATE OF NEW YORK AND THE COUNTY OF MONROE

FLORENCE A COOKSLEY, B A , M A , Rochester
Librarian, Rochester Academy of Medicine

Part I Outline of History of Medicine in the State of New York

Chapter III

Repeal of the State Medical Laws

Recommended by Commissioner State Society opposed to entire repeal, Quacks allowed to practice Decline of County Societies Organization of independent Medical Societies, Change in practice of medicine, Progress of State Societies Break in State Society

Now we come to a great change in the medical affairs in the State, occurring in 1844. Some might consider this period as a Dark Age in the history of medicine in New York State, beginning with that year. This change was brought about by the inadequacy of the law to control quackery. While Monroe County did not initiate the feeling against State regulation of medicine, it did begin an investigation into its effectiveness. Dr. E. M. Moore of Rochester was president of the State Society in 1874 and he said then that a committee of three had been appointed in 1844 by the Monroe County Society to study the question of State regulation. The members of the committee were Dr. Reid, "who firmly attached his name to the method of reducing dislocation of the hip by manipulation," Dr. Backus, "then a member of the State Senate and who became prime mover in the establishment of the school for idiot children at Syracuse," and Dr. Moore who said

In this country, there happened to be a pestilence of Thompsonianism of marked virulence and Dr. Backus produced the passage of the act now in force. This form of quackery, under the name of Electricity, has still a feeble hold on the community but I strongly suspect that legislation does little or nothing to prevent or sustain any form of practice and the law as it now stands, in this particular, is nearly as it should be.

This committee appointed by the Monroe County Medical Society wrote to all the State Societies asking if those states had laws regulating the practice of medicine and

surgery and if so, what they were. Thirty-two states replied. Never having such a law were eight states—New Hampshire, Rhode Island, Pennsylvania, Virginia, North Carolina, Kentucky, Tennessee, and Missouri. Ten states formerly had laws but repealed them—Maine, Vermont, Massachusetts, Connecticut, Maryland, South Carolina, Alabama, Mississippi, Indiana, and Ohio. Four, including New York, still had laws—New Jersey, Georgia, and Louisiana. A number of these State Societies spoke feelingly of the flourishing of quacks and patent medicines.

The Commission appointed by the State Society reported that quackery and patent medicines abounded everywhere despite law and penalties and that public opinion was not tolerant of laws regulating medical practice. They recommended (1) that in the present state of the public mind, all penal and prohibitory enactments are inexpedient, (2) that it is conformable to the spirit of our public institutions to leave perfect liberty to all to practice medicine, being amendable only for injury done, (3) that all legislation relative to the practice of medicine and surgery, as in all other arts and sciences, should aim to encourage, by affording such privileges as may be necessary to its highest prosecution, (4) that the important, if not the only remedy against quackery, is medical reform, by which a higher standard of medical education shall be secured.

Dr. Green, president of the Herkimer County Society, said in 1845¹

In order to render the profession more respectable and more worthy of the confidence of the public and at the same time to take measure

* Continued from our November 1 issue.

DISTRICT BRANCHES

Second District Branch

The thirtieth annual meeting of the Second District Branch of the Medical Society of the State of New York will be held at Garden City in the Garden City Hotel, November 19

The program begins at 10 A M and continues until 5 P M, with intermission for lunch (12 to 1)

Six comprehensive exhibits on the subjects listed below will be shown. All phases of the subjects will be illustrated, and every possible graphic method utilized—charts, models, photographs, x-ray films, gross and microscopic pathological material, and actual apparatus used in diagnosis and treatment.

1 The modern concept of tuberculosis and how it should be treated

2. Diabetes—its routine treatment How to

prevent emergencies which occur in diabetes and how to treat them if they occur

3 What every practitioner should know about the diagnosis and treatment of fractures

4 How can we find cancer early, and what can be done when it is found?

5 Newer knowledge concerning lead poisoning

6 Recent advances in our knowledge of the phylogeny, anatomy, and physiology of the blood forming tissue. How this knowledge has effected our treatment of blood diseases

During the afternoon there will be a meeting of the Woman's Auxiliary with program and entertainment for the ladies

At 7 P M the annual dinner is scheduled to be followed by dancing. A short business session will be held immediately after the dinner for the election of officers

THE LEGAL MUDDLE OVER INSANITY

Insanity, which is quite apart from mental disease, is a monstrous creation of lawyers causing many evils. This was declared dramatically by Dr Smith Ely Jelliffe, at the New York Academy of Medicine on Oct. 8

In his address for the laity, about "The Historical Background of Psychiatry," Dr Jelliffe, editor of the *Journal of Nervous and Mental Diseases* and veteran alienist of countless legal battles, traced the concept of "insanity" to ancient Roman lawyers

Thick-headed, aggressive, possessive minded, impatient of Greek scientists, these Romans created the muddled thing called "insanity," he asserted.

Said Dr Jelliffe of American lawyers and courts today

Side by side with the concept of mental disease there has run this legal monstrosity, insanity. Few there are who can separate the concepts. Thus we hear the asinine statement, "So-and-so is medically insane, but legally sane."

Insanity is not a medical concept. It has no place in psychiatry, the science of mental diseases

Only courts of law can make insanity. Definitions of insanity vary more or less in the 48 States of the Union, although they all follow a uniform pattern. If a person has mental disorder or defect of a degree sufficiently

variant from the average judgment of his fellows, he shall be judged incompetent, irresponsible, insane. He shall become a ward of the State, with respect to his liberty and his property

How the different legal definitions confuse us was shown by examples. New York law sends a killer to the electric chair, holding him sane, if he knew the nature and quality of his act and its wrongness. But New Jersey law will judge him insane even if he knew what he was doing and that it was wrong, provided he was unable to resist an impulse to kill

The absurdity of the whole procedure from a scientific viewpoint was described as more poignantly patent considering certain chemical effects on the mind. Dr Jelliffe stated that

In alcoholic intoxication, delirium of fever, ingestion of thyroid substance or too much insulin, causing hypoglycemia, a man does not know the nature and quality of his act, or that it was wrong. Even the alcoholic phase might be a symptom of epilepsy, many drinking sprees are. Then where are we?

The law in relation to matters of psychiatry is full of such dumb cluck tricks. To pull their own chestnuts out of fire, lawyers roar about the venal alienists. The public doesn't know the legal tricks and are always hoodwinked. The procedure usually is a farce from beginning to end

also many had obtained the medical degree easily and carelessly from some of the medical schools. We read that same charge in 1825 by Dr Manley in his annual address. He explained that the medical societies erred because of the latitude of construction given the provisions of the law. He charged the medical schools with giving too limited courses and accepting students unprepared by education to take up medical studies. He deplored the wholesale manufacturing of physicians.

The Monroe County Society passed resolutions which are recorded in the State transactions concurring in the wisdom of the revision of the law but recommended that all physicians continue to support County and State societies. The law, as most of the practitioners interpreted it, no longer required that all practicing physicians be members of the County Society, although many of the County Societies argued that no such change had been made by the new regulation. One benefit was claimed by members of some of the County Societies, who said they were no longer compelled to accept any licensed physician as a member but were free to elect whom they chose, making membership a privilege rather than a right and also giving them the power to disapprove an individual by refusing him membership. Further changes wrought by the new law were that there was no penalty for practicing medicine without a license. Both medical men and quacks considered this a recognition of quacks as medical men, to the delight of the quacks. These quacks of whatever persuasion or claims now practiced openly and charged fees for their doubtful services. The public which had so earnestly desired freedom of choice, could now knowingly or ignorantly choose anyone to treat the sick. Many were unable to distinguish between pretender and physician. Often they did not know whether Dr Blank had an M. D. after his name, or, if he had, what it indicated. We notice that in the early Rochester directories that some who had been listed as "Botanick Doctors," after this time were listed as simply Dr Blank, without any explanation regarding the omission.

The medical profession was much to optimistic in thinking that the public would distinguish between physicians and quacks. Dr Brismade said at the State meeting in 1858

I believe there is not a town or city in this State, in which there is not more money paid to irregular practitioners of various names and for nostrums and patent medicines, than is received by regularly educated physicians of those towns and cities and I am inclined to think the number of diseases partially treated and maltreated in this random way is fully as great as those submitted to more rational treatment.

We may understand the gullibility of the public in believing the claims of these false practitioners when we remember the high ethical standards of the true medical men which forbade advertisement of any kind and observe the self laudation of the pseudo-physician. We appreciate their pseudonym, "quack."

Stephen Rogers, M. D., President of the New York Medicolegal Society in 1872 said

During the last fifty years, the idea has been very prevalent and has been vehemently advocated by some of the most prominent men of this State, that improved education of the people would correct the liability to imposition by medical imposters. But it must have become apparent to every observing physician that this is a purely utopian idea. The people of our day have a right to the assurance that those who offer to serve them as physicians are intelligent in the subject and it is the plain business of the profession to do all possible to provide that certainty. In the opinion of this author, public confidence was destroyed and legislative control of the practice of medicine discontinued, on account of professional avarice and corruption in connection with medical colleges.

In that same year, Dr Rogers remarked to the New York State Medical Society

The accumulated evidence goes to convince us that neither the acts nor resolutions of medical societies nor of medical colleges nor even their united action, unaided by the strong arm of the law, will ever assure the people that the sign "Doctor" on a door or on a circular or on a card is a guarantee that his knowledge of medicine justly entitles him to claim public confidence.

While medical societies may guard themselves from evil and criminal association, they have, at present, no power by which they can protect the people from this danger and contamination. If there be no sectarian discussions, no further wrangling over therapeutic doctrines, which the public will never appreciate, but a united effort upon this grand requisition of education, the public will support it.

There seemed to be little bitterness in the medical societies because of the repeal. They

for its improvement, I would urge that the time of study be extended and the requirements as to qualifications for entering the profession be more exacting so that a sufficient time be required in preparation of the study. In this way will it be raised so far above quackery that the public will easily discern between their respective claims to patronage and respect which is due it.

The Select Committee on Petitions, praying for repeal of laws restricting medical practice, said in the conclusion of its report, "A people accustomed to govern themselves and boasting of their intelligence are impatient of restraint, they want no protection but freedom of inquiry and freedom of action." The State Society remonstrated against repeal of all law regarding medical practice and humbly asked for modification, requiring only (1) that the candidate asking to be examined for license, prove that he studied with an authorized practitioner, that he was twenty-one years old, of good moral character, had competent knowledge of the English language by submitting an essay on a medical subject, (2) that he had attended one full course of lectures at an incorporated medical college, (3) that he pass an examination before the Censors of the State or County Society and receive a license to practice, (4) having satisfied these requirements, the president to give a certificate which should be filed with the county clerk. The *Albany Evening Atlas* reported² a Mr. Scott's impassioned address before the Senate that year wherein he charged the medical men of the state of many things, including intolerance and want of knowledge and progress in their profession. He concluded, "The people of this State have been bled long enough in their bodies and pockets and it is time they should do as the men of the Revolution did resolve to sit down and enjoy the freedom for which they bled."

Mr. Carpenter, of the Select Committee, seemed to have even less appreciation of the medical profession for he said³

There are many who believe that the study of the healing art may be pursued to as great advantage by the inquiring and enlightened mind by reading the great book of Nature, which a wise and bountiful Providence has spread before him and obtain from it as great a knowledge of the healing qualities of roots and plants, flowers and leaves, as can be obtained from the study of musty books in the halls of the institutions of *materia medica*, and having acquired this knowledge and proved

the efficiency of his botanical preparations, he is as much entitled to the confidence of the public and should be allowed the same privilege to receive compensation for his services as is granted to the licensed practitioner.

In this day of restricted medical practice, with high educational requirements, required licensing, and with heavy penalties inflicted upon the unlicensed practitioner, the ignorance of that time and the lack of appreciation of the profession upon the part of the law-makers and of the public, is almost incredible. That the protection which the law had been giving the public against quackery should be regarded as a restriction of the freedom of the people now seems ridiculous.

So it came about that after eighty-four years of legislative regulation of the practice of medicine, the laws were repealed in 1844 and the door flung open to any who cared to enter.⁴

Consequently the learned and the ignorant, the physician and the empiric, enter the arena even-handed to compete for public favor. The laws of 1844 repealed nothing and exacted nothing which impaired the requirements of the previous statutes in regard to the study of medicine, the qualifications of physicians or the powers, functions and duties of medical societies. The scope and intention of the whole act is to open the practice to all who choose to avail themselves of the permission and to submit to the penalties which, in certain cases are therein provided and not to interfere with medical men, medical societies or medical colleges or universities.

The medical profession had felt since the organization of medical societies, that the association of physicians and surgeons was to their mutual benefit in the exchange of ideas and experiences and in the excitement to emulate or excel. They felt that the examination of students not only aroused the ambition of the student and improved the quality of new practitioners but also excited the pride of the censors themselves and a desire in them for an improvement in medical practice. The public did not recognize that the former laws were for its protection but rather considered them a grant to monopoly for the physician's benefit alone. Dr. S. A. Cook, in addressing the Rensselaer County Medical Society, said that the profession itself was partly to blame for this misunderstanding, for many had been admitted to practice without proper qualifications by careless County authorities and

never quite a hundred. The average attendance at the annual session of this Society for the first decade was sixteen, for the second decade twenty-three, the third, thirty-six, the fourth, forty-six, the fifth, sixty-four, the sixth, one hundred forty, while for the past eight years the attendance has averaged one hundred fourteen.

Nearly one-half of the presidents and one-fourth of the vice-presidents have been professors in medical colleges. Two-thirds of the presidents and nearly one-half of the vice presidents were dwellers in populous cities. Eighteen counties have furnished all of the presidents for sixty-two years, two counties have filled three-fourths of the terms, twenty-four counties have furnished vice-presidents, four counties have filled this chair twenty-five terms and the presidential chair forty-seven terms—in all a little over one-half of the time.

Albany has had ten presidents, who have served nineteen years and five vice-presidents who served eleven years. New York (City) has also had ten presidents, covering sixteen years and three vice-presidents. Next in order comes Oneida, which has filled the chairs eight years with presidents and three vice-presidents, Otsego, four and eight, Monroe, three and none, Onondaga, two and four, Columbia, two and three, Madison and Erie, each two and one; Chenango, one and four, Cayuga, one and three, Kings, one and two, Cortland, Dutchess, and Westchester, each one and one, Chemung, one and none, Herkimer and Montgomery, each five vice-presidents, Oswego, two, Broome, Chautauqua, Fulton, Greene, Ontario and St. Lawrence, each one vice-president for single terms.

We are indebted to this president for giving us this data regarding the workings of the State Society. Other statistics were needed and had been asked for by the State Society for some years—the vital statistics of the State. In 1858 the vice-president of the State Society remarked that according to the census of 1855, there were more than 6,000 physicians in the State and that if one in six of them reported four cases much would be contributed to the general knowledge concerning diseases in the State. In 1857 the State Society asked the County societies to pass resolutions to secure a uniform and permanent registration of births, marriages, and deaths. Here again, was found the need for cooperative effort between the County Societies.

Another outstanding feature of the period was the development of independent County and State Societies. The New York Pathological Society met twice a

month, the New York Society of Statistical Medicine met monthly, the New York Academy of Medicine, the Medical Association of Southern Central New York, and the Buffalo Medical Association held regular meetings. From these societies came annually 4,500 pages of medical material, of which about 3,500 pages were entirely original.

Frequently state presidents in their annual messages told of changes in the practice of medicine. President Alden March in his semi-centennial address in 1857 said that twenty years earlier club-feet and crooked eyes were seen frequently on the streets but had become scarce since the introduction of tenotomy. Less than fifty years before, compound dislocation of large joints demanded amputation, now decayed bone was being removed, joints excised, and limbs saved. Knowledge of *materia medica* had greatly increased and a nearer correct view of prophylactic and hygiene measures entertained. "In the first sixty years of the eighteenth century, one-half of the population lived over twenty-seven years. In the latter forty-years, one-half exceeded thirty-four years of age. At the beginning of the present (19th) century, one-half exceeded forty years, and from 1838 to 1845 one-half exceeded forty-three years. The average longevity at these successive periods has been increased from eighteen years in the 16th century to 43.7 by the last reports." Contrasted with the less than one-half dozen medical schools in the United States in 1807 and about the same number of hospitals, there existed in 1857 forty medical colleges or associations where medicine and surgery were taught and about twice that number of hospitals were scattered about the United States. Speaking of advances made in related sciences, Dr. March said that, "half a century ago organic chemistry was not known as a branch of chemical science. Within the last few years organic chemistry has made enormous steps but they still too evidently are the unsteady tottering steps of a young giant."

We have spoken of the high ethical code adopted by the medical profession in this state and how it was maintained and enforced through the years. It fashioned a pattern of behavior for a physician and a gentleman. Admiring the profession for

still continued to examine medical students and to issue licenses. It was the general opinion among them that the only legislation needed was to "provide a body of competent physicians and to give the public the means of recognizing them, leaving to the prudence of individuals to choose discreetly, and that all attempt to coerce people to discretion was wrong in principle and unsuccessful in practice." This was not the first time that the medical profession had this erroneous opinion. At the time of the passing of the law of 1844, a committee of the State Society in making a report regarding its repeal which had been suggested, said

We have laws enough and good laws. Quackery must be suppressed, not by legislation but by enlightening public opinion as to its dangers. The dignity and respectability of our profession is to be promoted not by asking for legal privileges but by an increase of individual zeal and a more cordial cooperation. It is a great error to suppose that a repeal of the restrictive laws put the physician on a level with the quack and takes away the barrier which separates them. The barrier which separates the two classes is formed by the higher attainments and honorable deportment of the members of the latter, and this is a barrier which depends on us to make higher and higher. It is the one which quackery will not surmount and which no legislative enactments can break down.⁵

Perhaps we can speak of the period we have just been describing as beginning the second era in the history of organized medicine in New York State. The first began properly in 1806 with enactment of the law to establish State and County Societies and ended in 1844 with the repeal of legislative regulation of the practice of medicine.

County organizations now began to decline, and in some of them the regular meetings were discontinued. Physicians stated that they were too busy, that it was difficult to leave patients to attend meetings, that the expense and loss of time was too great and also that the proceedings were neither interesting nor profitable. We must remember that transportation was then difficult and expensive as well as time consuming. The State Society tried to make the practitioners see that the law requiring all physicians to join a County Society had not been changed. That part of the law had not been repealed, it is true, but neither was there provision made for

enforcing it. The Transactions of 1858 state that the licensing power granted by statute, to the State and County Societies had become a dead letter as the college diploma almost covered the ground. That year no licenses had been issued by the State Society. Another reason for sustaining County Societies was the needed support of the State Society and of the American Medical Association. Each County Society was entitled to as many delegates to the State Society as that county had representatives in the State Legislature and the State Society in turn sent delegates to the National convention.

Pleading for stronger County Societies, President Weym said at the State meeting in 1872

An element like a medical organization, regularly and earnestly sustained, has so often proved the means of resisting error among the people, of inducing obedience to the standard of ethics and of individual profit and advantage to its members, that its value cannot be adequately estimated. No one who has observed the evidence of medical growth and strength will question that incalculable good develops out of professional intercourse that has passed beyond the technicalities of constitutional amendments and the alteration of by-laws and attained a condition that savors of legitimate scientific improvement.

One more presidential address may be quoted in part because of its historical and statistical information. It is that of Dr. George Jackson Fisher, president of the State Society in 1875. He said

In 1806 when the law to incorporate medical societies was enacted, the State of New York was divided into thirty-five counties and now into sixty. The entire population was then 700,000 and now 4,000,000. Then about 800 doctors, such as they were, practiced medicine without ethics or organization or legal restraint and now 6,000 physicians, such as they are, make up the ranks of our State medical army—not a few of these still sadly in need of regulating. Albany then had 1,000 houses and 7,000 inhabitants, now 80,000 people. Buffalo then had 1,508 inhabitants and now is eleventh in the United States with 120,000 inhabitants. Where were Troy, Utica, Syracuse, and Rochester? They had no existence [1806].

The attendance at the first meeting (of the State Society) was twelve, at the last, two hundred fifty-five. It did not reach twenty-five until the fourteenth annual session. Forty-two years passed before the attendance reached fifty and during the first half century it was

ence upon organized medicine. Dr Hans B Gram, the first homeopathic doctor to come to this country, arrived in New York City in 1825 and was the sole practitioner of that school for two years but within ten years a New York Homeopathic Society had been formed with nine members and in 1841 a new organization, the New York Homeopathic Physicians Society was founded. The State Homeopathic Society was organized a little later King gives the following numbers of early homeopathic practitioners

1852-	301	1880—	968
1857~	433	1899—	1203
1870-	727	1904—	1206

That the homeopathic practitioners were regarded as quacks for many years is evidenced by the many disparaging remarks made in the annual presidential addresses of the State Medical Society. As we study the State medical annals we are persuaded that some of the so-called homeopathic quacks were without doubt, truly quacks hiding behind the standard of homeopathy and committing misdeeds in its name.

The Transactions of the New York State Medical Society contain an address by Dr Thomas Blatchford, president of the Rensselaer County Medical Society in 1842, fifty-five pages long, on the subject of homeopathy. In defining homeopathy he compares it to a "footless stocking without a leg." In scathing language he condemns the claims of homeopathy and its pharmacopeia. He quotes from two letters from past presidents of the State Society, one from Dr John B Beck of New York who says he knows of nothing more absurd than homeopathy and one by Dr John Stearns of the same city, who calls homeopathy the most sublimated imposture ever registered in the annals of medicine.

Again, in 1845 the Transactions record an address given before the Herkimer County Society by its president, Dr L Green. He said

While we can not but lament the vices and folly of human nature, if we examine closely we shall find that wherever ignorance bears sway there quackery flourishes most and that this is the soil in which it is fostered and nourished and in which it grows most rapidly and luxuriantly all grades from her who scrupulously adheres to "yarb and root" teas, and him who deals in vapor baths, lobelia and cayenne pepper glysters and who most religiously eschews the use of all minerals what-

ever, through the long list of cancer doctors, Indian doctors, German doctors, Hydropathists, to him who practices after the algebraic principle, that two negatives make an affirmative, who prescribes one evil to cure another of like magnitude, or in other words, would add fuel to *put out* the fire, who will undertake to cure a most inveterate case of fever and ague with an infinitesimal portion of medicine in a specified time—we will find that each separate system owes its origin and continuance and existence to either ignorance and credulity, avarice and ambition, superstition or all combined. All these systems, like their predecessors, must and will have their day as long as the causes above cited exist, but it is a fact by no means encouraging, that while each system in its turn explodes or dies a natural death, numerous others rise up "Hydra" like to occupy its place, while the true science of medicine has continued steadily to advance, unshaken by false and absurd theories—but gradually, progressing and improving, has at last attained a stand among the professions second to none.

In the same volume, Rensselaer County again casts its disapproval upon the new treatment in an address on the progress of medical science by Dr Simon A. Cook. Speaking of impostures, he stated, "True, the influence of amulets and charms and incantations has passed away but we have in their places the mumeries of magnetism, the ravings of Thompsonianism and the infinite follies of Hahnemannism." At the annual meeting of the Monroe County Society in 1845, its president, Dr E. W. Armstrong said, "The absurdities of homeopathy have already been sufficiently exposed, to convince those who will take the trouble to examine and reflect, of its utter worthlessness and that as a system, if system it may be called, it has no foundation but the vagaries of a disordered mind or the deliberate but ignoble design of immortalizing the name of its author, at the expense of common sense, truth, and decency." Dr Armstrong, like many others of his time, predicted an early ending of the practice of homeopathy.

In 1847 the Transactions give an address by Dr Joseph Bates who spoke at the annual meeting of the Columbia County Medical Society. He spoke of quackery in its various forms and in condemning those who were advocating the "electric theory" said, "I should suggest a heated oven at the temperature of 500 degrees Fahrenheit to cure every man or woman, practicing Mesmerism, Homeopathy, Hydropathy,

its high standards which it struggled to maintain, it comes as a surprise and shock to learn, while reading through the old Transactions, that this same fine old code became a stumbling block and finally created a rift within the rank of the State Society, a break that caused a twenty year separation of old professional brothers, separated from each other in two State Societies and at the same time, causing them to be cast from the fold of the American Medical Association. The same great organization, the American Medical Association had been formed through the efforts of the members of the New York State Society and it was with grief that the New York men received the ultimatum that the doors of that body were absolutely closed to them.

That we may better understand how this break came about, it will be necessary for us to retrace our steps and consider briefly the rise of homeopathy in the State of New York, for it was disagreement regarding the recognition of homeopathic practitioners which caused a change in the code of ethics and at the same time the rift in the State Society.

References

- 1 Trans New York State Medical Society, 6 97, 1845
- 2 Trans New York State Medical Society, p 60, appendix, 1845
- 3 Ibid p 73, appendix.
- 4 Trans New York State Medical Society, 6 105, 1844
- 5 Trans. New York State Medical Society, p 37, 1857

Chapter IV

The Two State Societies and Their Union

Formation of the A.M.A., Rise of Homeopathy Feeling against Homeopathy, Legalizing of Homeopathic practice, the New Code, Split in State Society and formation of another State Society the two Societies united in 1906

To New York State has been given the credit of founding the American Medical Association. The first attempt to form this society came in 1839 and the second in 1844 but it was two years later that success finally came. The object in organizing the American Medical Association was to raise the standard of the profession by closer supervision of medical schools. Many schools had opened and competition was great among them and in order to attract students, terms of study were shortened requirements for entrance were lessened, and examinations for graduation simplified. It was impossible for any one state or a small group of states to remedy this condition. It could be done only through the concerted efforts of all the state societies, acting together in a national organization.

By invitation from the New York State Society, delegates from many medical institutions and societies assembled in New York City in May 1846 and appointed committees to prepare plans for a national society. This new society was to consider standards of medical education and also to prepare a code of ethics and a nomenclature of diseases. It was to be an organization in which members "shall collectively represent and have cognizance of the com-

mon interests of the medical profession in every part of the United States." In May of the following year the American Medical Association was formally organized in the city of Philadelphia.

In this manner the largest and no doubt greatest medical organization in the world was created and New York State is recognized as its founder. The ethical code of the New York State Society had been in existence for many years and the new code of the American Medical Association was not greatly different. Proud of their code and of their part in forming the National body, the members of the New York State Society sat in bitter grief when this same code was made the cause of a break in the State Society and its expulsion from membership in the American Medical Association. In order that we may understand the entire cause of this separation, we must consider briefly the rise of the practice of homeopathy in this state and discover why the gradual recognition of the homeopathic practitioners led to the quarrel in the State Society.

The early history of Homeopathy is interesting and is discussed at length in the four volumes by King¹. We can only mention its rise in this state and its influ-

Transactions of 1862 include resolutions from the New York Academy of Medicine protesting against the employment of any homeopathic physicians in the army, their methods being closely allied to quackery and such appointment would dissatisfy and dishearten the medical staff of the army, "who understand the true character of homeopathy and who have entered the service of their country with confidence that the government would strive to elevate the standard and promise the efficiency of the medical staff" The State Society approved the resolution.

About that time, the County Homeopathic Societies began to organize, beginning with that of Albany County in 1860. By 1865, most of the counties had been organized and their societies met regularly. Homeopathic hospitals were erected in various parts of the State, the one in Brooklyn growing out of the old Brooklyn Homeopathic Dispensary which opened in 1852. Children's hospitals, hospitals for women, and maternity hospitals were erected by the homeopathic men who had been refused admittance into the "regular" institutions.

Another class of medical practitioners, the Eclectics, sought recognition by the Legislature. We learn little of the Eclectics from the transactions of the State Society, the name being mentioned but seldom and then, merely as one in a list of so-called quacks. In 1865 this medical society was also recognized by law and an unusual situation now arose. Dr Henry R. Hopkins in his inaugural address in 1903, said

In 1857 the unity of the medical organization of the State of New York was broken by the creation of a second system of societies, State and Counties, having the same general and local powers and privileges as those authorized in 1806 and in 1865 was still further interrupted by the authorization of a third system of medical societies, State and local, and since that date there has existed in our State the monstrous anomaly of three distinct classes of physicians having equal authority to practice medicine and equal privilege to enjoy the honors and emoluments of that practice, that this unfortunate condition of medical malorganization was inimical to the best interests of our profession, history will abundantly attest.

In 1867, two years after the Eclectics were legally recognized, Dr Joseph C Hutchison stated in his presidential address to the State Society, in commenting upon this triple system of medical practice,

"Today the enlightened and skillful votary of legitimate medicine occupies in our State the same legal standing as he who sacrifices his common sense and his conscience in the fraudulent practices of the most odious quackery." So for many years the State of New York had three Medical Examining Boards, with greatly varying examinations and requirements.

Dr Hutchison also told of the struggle with the homeopaths during the summer which had just passed, while the cholera epidemic endured in New York City. The Sanitary Committee of the Board of Health had recommended that permission be granted to homeopathic physicians by the city to assist in a given proportion of the hospitals but the Board of Health ignored the recommendation. Dr Hutchison in strong terms criticized the Committee for thus exposing the patients to inefficient care and also charged the members with a violation of the ethical code in countenancing quackery.

Rebuffed at every hand but heroically carrying on, we find the Homeopathic practitioner finally coming into his own. How that came about is another dramatic chapter in the unusual history of the New York State Society.

We may say that the first act of the new drama opened on February 7, 1882 when Dr Abraham Jacobi, president of the State Society, on the first day of the annual meeting called upon the Committee on the Code of Ethics to report on proposed amendment of the code and it was voted to devote the entire evening to consideration of the report. The report was read, discussion was opened and Dr D B St. John Roosa of New York spoke at length against acceptance. He objected that many of the out-worn and controversial parts of the code had been retained but the rules governing consultation had been so worded that a practitioner could call into consultation any one whom he chose, "be he homeopath, eclectic or the seventh son of the seventh son, an Indian doctor or whatsoever he be." Dr Roosa offered instead of the proposed code, this simple one.

With no idea of lowering in any manner the standard of right and honor in the relations of physician to the public and to each other, but on the contrary, in the belief that a larger amount of discretion and liberty in individual action and the abolition of detailed and specific rules, will elevate the ethics of the profession,

Thompsonianism or any other form of quackery, or for making and vending any kind of nostrum" In no less bitterness are the homeopathic practitioners condemned by Dr W Hooker reporting for the Committee on Medical Education to the American Medical Association, which report is republished in the New York State Transactions of 1852 He stated that only character and education should admit anyone to practice medicine and that the great majority of homeopaths were uneducated men or superficially educated He asserted that physicians who had become converted to homeopathy and therefore expelled from the medical societies had been expelled for the wrong reason They should have been excluded not for their opinions but for misdemeanors, "any act by which they associate with the common herd of homeopathic practitioners is a misdemeanor, which is a proper ground of expulsion"

May we pause here to state, that in citing these opinions of leading men in the medical profession, we criticize neither those condemning nor those condemned Unless we can show the animosity and bitterness which existed between the so-called "regulars" or "allopaths," and the homeopaths and demonstrate how homeopathy through great trials, came to a position of importance and strength, we shall be unable to give a clear picture of the circumstances leading up to the split in the State Society We are trying to portray how year after year, the feeling against homeopathy grew and was publically expressed until the great change came, when this unanimous disapproval in the State Society ceased and dissension came into the ranks of the State and County Societies

To cite a few more examples of the expressions of hatred for homeopathy, in the 1853 records, Dr Jonathan Kneeland, president of Onondaga County Society at the annual meeting classed "as heretical practices, homeopathy, hydropathy, physopathy, kinesopathy and their kindred fallacies, crono-thermalism, mesmerism, animal magnetism, eclectism, etc." Dr Edward H Parker, president of the State Society, addressed that honored body at its annual meeting in 1862 and, in speaking of the credulity of man, gave examples of man's simple belief and added, "I draw my illustrations from the homeopaths only because they happen to be just now the most

fashionable of quacks" Again, it was the president of the State Society, Dr Daniel P Bissell in 1864, speaking on medical progress, who said that instead of looking upon homeopathy as a harmless folly or a useful satire on medicine, the public should be awakened to a sense of its debasing and destructive effects "Duty demands," he said, "that we should consider and expose these changing errors and impostures as they arise and take care meanwhile that they find no shelter or protection under the garments of truth and medical science."

In his anniversary address in 1875, the president, Dr George Jackson Fisher, calls homeopathy "the most stupendous fraud of the present age, the greatest delusion and the most subtle snare with its system of specifics and potencies, its infinitesimal pharmacy and therapeutical juggery"

But what were the practitioners of homeopathy doing during this time of condemnation from the members of the State Medical Society; were they sitting in quiet hope that the storm would pass or were they striving for a place in the sun? They were not sitting still Refused admission into the State and County Societies, they organized their own societies They built their own hospitals and medical schools and published their own books and periodicals, but only after long years of struggle, during which time their membership grew in numbers and strength

A homeopathic medical school was founded in Philadelphia as early as 1848 but the Legislature at Albany refused to charter such a school in New York State in 1846 and again in 1853 In 1880, however, a charter was granted to incorporate the Homeopathic College of the State of New York in New York City Nine years later its name was changed to the New York Homeopathic Medical College. The law of 1844 required the licensing of all physicians and the medical societies refusing admittance to practice any that were homeopaths, these men were subject to the law for practicing without a license until, in 1857, the Legislature of the State allowed the homeopathic societies to incorporate. This act is spoken of as the legalizing of homeopathy

During the Civil War homeopathic physicians, claiming that many of the soldiers preferred homeopathic treatment, offered their services but were refused. The State

State Medical Association, the new and second State Society. This volume records a meeting held on February 4 and 6 of that year, the day before and the day after the memorable meeting of the New York State Medical Society, when the new code was upheld. Seventy-six attended the meeting on the fourth. Dr Austin Flint of New York County offered a resolution that a new organization to be known as the New York State Medical Association be formed. Its immediate object should be to support the old code and be a part of the American Medical Association. Dr E. M. Moore stood alone among the speakers, asking that the resolution be laid on the table for one day until the New York State Medical Society had met and a vote taken on the new code, that vote then being in order. Dr Moore further suggested waiting for another year or even five years if necessary, until there was a change of heart in the old organization. However, a vote was finally taken upon Dr Flint's resolution and carried unanimously, it being understood, apparently, that if the vote in the old State Society should unexpectedly repeal the new code, then the new organization would be unnecessary.

The new code was ratified in the old State body the next day. The new organization met a day later, elected its officers, appointed committees, divided the state into districts, and prepared for incorporation. Dr H. D. Didama was chosen president. The first annual meeting was held the following November in New York City. From that time on, until 1906, for twenty-two years, there existed two medical societies of the State of New York, unhappy years for both organizations. Because we must bring this record to a close, we must omit the transactions of the two societies during those years of alienation, years during which little was accomplished for medicine through legislation, and relate how they gladly amalgamated once more. Members of the old State Society who had met as brothers year after year, now met in hostile camps, thinking of each other only with bitterness. They differed upon a matter of principle and each thought himself right. But rancor and bitterness lessened as the years passed. Younger men entered the group, understanding little of the old struggle and caring less. They saw only the futility of the two societies and the older men forgot

their bitterness and longed for the association of the old friends still living. Their grief at separation had outlasted their anger at its cause and they yearned for reconciliation. Many of the men, old and young, had joined both societies and more and more the two organizations grew alike.

Again we turn to the presidential addresses to witness this change of sentiment. Dr Henry L. Elsner, president in 1902, asked for greater liberality in the admission of members into the State Society. He said that the State Legislature did not discriminate in its treatment of any school. "We know no pathy, dogmas have long since faded from our memories. Let us continue to exert our influence in favor of unification of the profession, our doors are open to all who practice rational and practical medicine, to all who are willing to discard dogma and who have given the State proof of proficiency and are of good moral character." He stated further, that the time had come for a final effort having for its object, the gathering of the profession of this State under a single banner upon a liberal platform and with representation in the American Medical Association. He recommended that the Medical Society of the State of New York appoint a committee of five to confer with an equal number representing the New York State Medical Association for the purpose of formulating a plan which should have for its object the reorganization of the regular profession of the State, this body to be in affiliation with the American Medical Association, this committee to report at the next meeting. The president's recommendation was adopted.

While the New York State Society delegates were excluded from the American Medical Association, the members of the State Association were received by that body. Dr John A. Wyeth, president of the New York Medical Association in 1901 was president of the American Medical Association the following year, when the National organization met at Saratoga Springs. When the State Association "extended the olive branch" to the older State Society, as Dr Alvin A. Hubbell, president of the State Association in 1902, said in his annual address, one of the inducements offered, was membership in the American Medical Association. He said that no progressive physician could afford not to

the medical profession of the State of New York, as here represented, hereby resolve and declare, that the only ethical offenses for which they claim and promise to exercise the right of discipline, are those comprehended under the commission of acts unworthy a physician and a gentleman.

Many delegates arose, some to agree with Dr Roosa that the code should be discarded entirely, others to state that a code was definitely needed. Dr E M Moore of Rochester moved an amendment to Dr Roosa's substitute, proposing that the subject be brought before the American Medical Association for consideration first. Dr Moore agreed with earlier speakers that the A.M.A. code was unusual and said he had investigated its source and found it had been copied almost verbatim from "a treatise written by Dr Samuel Percival in 1760, in accordance with the condition of society presented in England at that time, which was entirely aristocratic, governed by the law which regulates the relations between patron and client." Dr Moore's motion was lost.

Most of the discussion on the proposed new code was upon the question whether homeopaths might be called in consultation in cases. That morning, the president, Dr Jacobi, had remarked in his opening address that a change had come in the situation in the State. He said the homeopaths had made overtures to the profession, claiming that they no longer differed in practice and Dr Jacobi recommended that therefore the old boundaries should be abolished. After much discussion a vote was taken and the report of the Committee on the Code was adopted, 52 voting for and 18 against.

The next year, 1883, the president, Dr Harvey Jewett in his opening address stated that news of the adoption of the new code had not been well-received, that county societies expressed dissatisfaction with the code as unbecoming to the dignity of the profession and revolutionary in its nature and disorganizing in its tendency. He also stated that the American Medical Association had refused admission to the delegates from New York because the new code was too progressive and too liberal in spirit in reference to established rational medicine existing at the time. The objectionable clause was the one permitting consultation with any legally recognized practitioner of medi-

cine. He asked that the Society consider the code again whether to confirm, modify or abolish it.

After letters from numerous county societies were read, objecting to the new code, a motion was carried to repeal the new code, permitting the old code to stand and a new Committee to suggest changes at the 1884 meeting. In 1884 the code again came up for consideration. It was claimed by many that at the time of its adoption, there were too few delegates (70) present and that the membership at large, while knowing that a change in by-laws was to be suggested, did not know that so radical a change was contemplated, nor if they had known, would have approved. The membership of the County Societies resented the fact that the National Association had closed its doors to the New York State delegates.

Dr H D Didama spoke of the meetings of the State Society which before 1882 had been joyful occasions, scientific matters being discussed without acrimony and delegates parting reluctantly as brothers. Since 1882, he said, angry discussion had taken the place of friendly debate and the Society was divided into factions threatening a permanent rupture with old friends turned into lasting enemies. Dr E. Mott Moore read an article from the *Journal of the American Medical Association* of 1884, in which the members of the National organization are reminded of the formation of that body in 1847 in Philadelphia, the delegates having assembled upon the call of the New York State Society members, also that the New York State men assisted in forming the laws and the code and that it was the duty of the New York State Society before changing its code, to bring the matter to consideration before the National organization.

The resolution of Dr Didama of the year before, was then brought to vote. *Resolved*, That all action taken at the annual meeting in 1882, in regard to changing the Code of Ethics, be repealed, leaving the code as it was before such action was taken. There were one hundred five votes cast in favor of the resolution and one hundred twenty-four against. Thereby was the new code established.

For the second scene in this drama, we turn to the transactions of July 1884 of the first regular meeting of the New York

rollment of 10,000 New York State practitioners in the American Medical Association, constituting twelve per cent of the membership of the National body. By 1924, the activities of the State Society had expanded to such an extent, that it was necessary to increase the dues to ten dollars a year. A salary to the Editor of the *STATE JOURNAL* was one of the expenditures now made possible. Another important activity of the Society, the giving of postgraduate lectures before the County Societies, was also begun the following year. The amending of the Medical Practice Act was probably the most important transaction in the years that came after.

With the enumerating of these few activities of the State Society, we conclude this part of the record. Much has been omitted of the great work the organization has done through the years. Walsh in his history has related many of these important transactions. Many more of interest might be told. This limited history of organized

medicine in the State of New York has been written, as was stated in the beginning, that a better understanding might be gained of the Medical Society of the County of Monroe and its transactions and to the story of that Society we will now proceed.

Since the one hundredth meeting of the State Society and its reunion that year, 1906, great good has been accomplished in the State, in matters of medical interest and all this is reflected in the acts of the County Societies. While the story of this later work would lack the dramatic appeal of the earlier history, it is no less wonderful and productive of good to the public and to the medical profession itself. Its telling must be deferred to another record.

We turn now to the story of the Monroe County Society and endeavor to catch the reflection of the great work of the State Society.

Reference

- 1 King William H. *History of Homeopathy* 1905

(To be continued in the next issue)

MORE ABOUT THE SOVIET MEDICAL PARADISE

Another glimpse of the rather spotty heaven of socialized medicine in Soviet land is given us in an article well subtitled "Paradise Imagined," by William Henry Chamberlin, in *The American Mercury*. He writes

Much is made of the socialized features of the worker's life in the Soviet Union, of the State medical aid, the rest homes, the number of workers at the opera and theater, etc. A good deal of valuable social work has been done in Russia, as in other countries, since the War, but when the benefits of the Russian workers are closely examined a good deal of the glamor tends to disappear. Take, for instance, the quality of socialized medicine. Here we have the interesting recent testimony of Mr. Edmund Wilson, whose writings characterize him as a definitely sympathetic observer of the Soviet Union. During a trip to Russia, Mr. Wilson contracted scarlet fever and spent six weeks in a hospital in Odessa. It is not likely that Mr. Wilson, as a foreign visitor, was assigned to the worst hospital in the city, which is the third largest city in the Ukraine. His report on the sanitary conditions which he witnessed is, to put it mildly, unfavorable.

The bathrooms were garbage piles. The hospital was infested with flies. The wash basin with running water was used for face-washing, dish-washing, gargling, and bedside purposes.

Mr. Wilson's faith, however, was proof against this test. He adopted a method of interpretation which is sufficiently common to call for some analysis. From the deplorable condition of a Soviet hospital in 1935, he deduced how frightful Czarist Russia must have been before 1917. Somehow this suggests the explanation of the patriotic Hungarian hotel-keeper who, in response to a guest's complaint about unpleasant nocturnal insects in 1930, replied, "Well, you know those dirty Roumanians occupied Budapest in 1919."

Several personal experiences have led me to believe, that, whatever may be said for the theory of socialized medicine, its practice in the Soviet Union leaves a good deal to be desired. Once when my wife was in Sochi, a Black Sea resort where malaria is rife, she asked in a drug store for quinine. She was told that the supply was so limited that it could only be sold to persons who already had contracted the disease. The servant of a friend broke her arm. She went to the clinic where she was entitled to free treatment and was sent away by a physician with the assurance that it was nothing serious. Only when her employer engaged a private physician did she receive proper treatment. It is noteworthy that anyone who can afford to patronize the experienced doctors and dentists who still maintain private practice almost invariably prefers to do so, instead of exercising his legal right to free treatment.

be a member of the A M A. and that the only Society in New York State affiliated with it, was the State Association "Then let us," he said, "one and all, seek to impress this fact upon our neighbors and without hostility or controversy, endeavor to enlist them with us and by a process of absorption wipe out the lamentable division of the profession of our State and thus bring it once more into unity."

Two years of active negotiations followed, during which time the committees of the two bodies combined as one with Dr Abraham Jacobi, "the Virchow of American medicine," as chairman. So stated President Algernon T Bristow at the annual meeting in 1904. He said that nearly a quarter of a century ago the State Society had been rent in twain by a dissension which had its origin in a question of principle. Each side had viewed the question from a different viewpoint and the difference seemed irreconcilable. However, "changes in medical education, the establishment of medical examining boards, the elevation of the standard of requirements and the slow progress of advancing years which heals all wounds and finally composes all differences, have made it possible for our brethren, who left us so many years ago, to return to us, who gladly welcome them."

Articles of consolidation were read and adopted. The two societies joined as the Medical Society of the State of New York, with one treasury, with all members of each eligible for membership in the State and County Societies, with the code of the American Medical Association as a suggestive and advisory guide for members in their relation to each other and to the public. Fully expecting that the union would be completed the following year, the members were deeply disappointed to find that a legal technicality stood in the way. It was not until December 9, 1905, that at a special session of the Supreme Court meeting in Rochester, the order was signed consolidating the two medical societies. The first meeting of the united members was held in Albany on January 30, 1906, at which auspicious time, the one hundredth meeting was celebrated.

At this meeting a letter was read from Dr Lewis S McMurty, president of the American Medical Association, inviting the

New York State Society to send its quota of delegates to the next meeting of the National body, to be held in June. The president of the State Society, Dr Joseph D. Bryant, happily announced at this State meeting, that the Medical Society of the State of New York would be fully represented in the House of Delegates of the A M A. The new State Society with over six thousand members now became, as it had not been for many years, a powerful body working for the protection of public health through legislation, raising the standards of medical education and medical practice.

With the close of this interesting drama of misunderstanding, separation, and final joyful reunion in the State organization, we conclude this part of our record. The thirty years which have passed since the reorganization of the State Society, have brought important legislation and changes. The year 1906 was a most successful year after twenty years of divided efforts. The treasury which had shown small yearly balances or sometimes deficits, ended that annual session with a balance of \$3,094 01, with all bills paid. At the time the vote for amalgamation was taken by members of the State Association, 1,517 voted aye, two no, and 295 cast no vote. There were, therefore, over 1,800 members in the Association. Yet when the two memberships were combined, it was found that the old group had gained only 423 members. One cause for the desire to amalgamate had been that so many men had joined both groups and the expense of supporting two State Societies had been excessive.

During the one hundred years of its existence, the Medical Society of the State of New York had been meeting in Albany in January or February. In 1875 a law had been passed in the State Legislature permitting the Society to meet in another city providing a year's notice was given. The law was disregarded and finally forgotten until in 1909, it was revised to permit both a change in meeting place and a change in time. Since that time, meetings have been held in various cities of the State in the month of April or May.

A few other interesting events were the passing of a bill to establish a single, joint Board of Examiners in 1907 and, in 1908, a law requiring registration of physicians by the State. In 1922, there was an en-

that all County cases first be hospitalized in the County Hospital and then, if deemed advisable, they may be transferred to other hospitals" This resolution was carried and the president appointed Doctors Davidson and Brittan

The Economics Committee recommended that the society accept the fee schedule adopted by the Metropolitan area for compensation work and the recommendation was carried.

The guest speakers, Dr Marie P Warner and Dr Benjamin Warner, gave an enlightening discussion on contraception and its technic, illustrated by slides and moving pictures

Dutchess County

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The guest speaker at the medical society meeting was Dr Maximilian A. Ramirez, F.A.C.P., physician at the French and St. Vincent's hospital in New York city His topic was "A Practical Discussion of Allergy"

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The retiring physician was Democratic candidate for mayor in 1915 and served on the Board of Education for eight years and six more on the Board of Health He has been a member of the staff of St. Francis hospital and a member of the courtesy staff of Vassar hospital

Dr Borst intends to continue his pursuit of outdoor sports which includes hunting and fishing in the Adirondacks and golf

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DR. C. C. KOESTER of Batavia was elected president of the Buffalo Ear, Nose and

Throat Society at the annual meeting in Buffalo He served as vice-president last year The society is composed of specialists in the Buffalo area and holds monthly discussion meetings

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The meeting was attended by 18 members of the county society who received Supervisors Ward, Murdoch, and Carr who discussed medical relief cases Assemblyman Thomas A. Leahy talked on medical legislation

Greene County

A GROUP OF FRIENDS of Dr Horace G. Baldwin, headed by Dr George W. Bassow, presented him with a new, four-door de luxe Buick sedan, recently, says the *Catskill Recorder* The presentation was held at the Baldwin home in Tannersville and showed the high esteem in which Dr Baldwin is held by his many friends and patients in the Summer colonies of Elka Park, Onteora Park, Twilight Park, Platte Clove and Catskill, and local residents of Hanes Falls, East Jewett, Tannersville, and Hunter, as well as a number of local organizations The idea originated with an anonymous resident of Twilight Park and met with hearty approval. The gift was made purely as an expression of good-will which the community holds Dr Baldwin in, who has devoted thirty-two years to Mountain practice.

AT THE 130TH ANNUAL MEETING of the Medical Society of Greene county held at Walters' Hotel in Cairo on Oct. 13, the following officers were elected

President, Dr T. Earl McQuade, of Coxsackie, vice-president, Dr Alton B. Daley, of Athens, secretary, Dr William M. Rapp, of Catskill, treasurer, Dr Mahlon H. Atkinson, of Catskill; chairman of committee on public health, Dr M. K. Colle, of Catskill, chairman of committee on legislation, Dr P. G. Waller, of New Baltimore, delegate to State Medical Society, Dr Norman S. Cooper, of Athens

Dr Thomas Parks, of New York City, was the speaker of the evening The meeting was preceded by a dinner

Kings County

THE NEXT REGULAR monthly meeting of

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested.

Albany County

THE OCTOBER MEETING of the Medical Society of the County of Albany was held in the Auditorium of the Albany College of Pharmacy, October 28. The Scientific Program "Coronary Heart Disease," Vice-Presidential Address, Dr Charles A Perry

Bronx County

THE UROLOGIC STAFF of the Morrisania City Hospital will give the following lectures for the general practitioner of the Metropolitan area, who are invited to attend Time 3 to 4 P M

Nov 19, "Urogenital Tuberculosis," Dr John Duff

Dec 17, "Prostatic obstruction," Dr John J Roth.

Jan 21, 1937, "Treatment of gonorrhea in the male," Dr Terry M Townsend

Feb 18, "Hematuria," Dr John Duff

Mar 18, "Non-specific infection of the male genital tract," Dr John J Roth

Apr 15, "Stone in the urinary tract," Dr Terry M Townsend.

May 20, "Practical urological diagnosis and treatment," Dr John Duff

June 17, "Renal infection of non-calculous origin," Dr John J Roth

Broome County

THE BROOME COUNTY Medical Society met on Oct. 16 at the Binghamton City Hospital and listened to an address by A. H Aaron, MD, Professor of Gastro-intestinal Diseases, University of Buffalo, on "Diagnosis and Treatment of Common Gastro-intestinal Diseases"

OUR LADY OF LOURDES hospital medical staff announces completion of its reorganization, headed by Dr William A. Behan as president of the staff, with Dr Blinn A Buell as secretary, and the following new committees

Executive H I Johnston, John J Cunningham and Howard W Davis, credentials, S D Molyneaux, John D Bowen and Walter J Farrell, interne, George T Vogt, H P Griffin and C J Marshall, record Emil C Mrozek, John J Brick, I Smith and Hyman Snererson

Chemung County

GREAT INTEREST is evident throughout the State in the negotiations going on for determining public welfare medical and hospital costs. In Elmira the appointment

of a Medical Advisory Board to control hospitalization costs for public relief patients is announced by City Manager Hunter in a letter to Dr Arthur C Smith, president of the Chemung County Medical Society

The committee will consist of two city physicians, a physician each from the Arnot-Ogden and St. Joseph's Hospitals, Mrs Jane Watson, home relief director, two City Councilmen, and the City Manager

The letter to Doctor Smith

I spent the greater part of last week at a conference of New York State Commissioners of Public Welfare in Albany and was not surprised to learn that the general feeling throughout the state is that public welfare medical and hospital costs are entirely too high. In fact, the average in the state is less than the cost in Elmira and is still considered too high by the state officials

As you know, I have made every conscientious effort during the past three or four months to reduce the cost of this branch of welfare to the city and the taxpayers and we have had several conversations on this subject. It is recommended to me by the New York State Department of Welfare that some sort of medical advisory board be established in Elmira and conforming with this recommendation I am asking that you appoint a physician to this committee from the Arnot-Ogden and St. Joseph's Hospitals

The committee is to consist of Doctor Larson and Dr Creighton, the two city physicians, the two doctors which I am asking you to appoint, two members of the City Council, Mrs Watson, director of public welfare and myself

The intention of this committee is that we may, through our combined efforts and better knowledge of the situation, find and put in practice whatever methods can be devised for better service and lower costs and I will appreciate the co-operation of yourself and the Medical Society in this effort.

Delaware County

DR WILLIAM M THOMSON, of Delhi, Secretary, reports that the Delaware County Medical Society met at Stamford on Sept. 15. A resolution was moved by Dr Brittan and seconded by Dr Davidson that "a committee of two be appointed by the President of this Society to petition our County Board of Supervisors asking them to designate the Delaware County T B Sanatorium as a clearing station for all county T B cases, making it compulsory

that all County cases first be hospitalized in the County Hospital and then, if deemed advisable, they may be transferred to other hospitals" This resolution was carried and the president appointed Doctors Davidson and Brittan

The Economics Committee recommended that the society accept the fee schedule adopted by the Metropolitan area for compensation work and the recommendation was carried.

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Kings County

THE NEXT REGULAR monthly meeting of

the Medical Society of the County of Kings will be held at the MacNaughton Auditorium, 1313 Bedford Ave., on Tuesday evening, Nov 17 The program

"Acute and Chronic Bacillary Dysentery, with Especial Reference to Chronic Distal Ileitis and Chronic Ulcerative Colitis", Joseph Felson, M.D., Bronx (Lantern Slides)

"Chronic Regional Ileitis and Coloileitis, from the Pathological and Surgical Point of View," Albert A Berg, M.D., Manhattan (Lantern Slides)

Also given at the MacNaughton Auditorium are the Friday Afternoon Lectures at 4 30 P M

November 20, Joseph C. Aub, M.D., Boston, "Clinical Aspects of the Normal and Disturbed Calcium Balance."

December 4, Harry Wessler, M.D., Manhattan, "Surgical Indications in Thoracic Disease."

December 11, Gregory Schwartzman, M.D., Manhattan, "The Role of Bacterial Reactivity in Infections and Anaphylactic Processes"

THE MATERNITY CENTER DIVISION of the Brooklyn Visiting Nurse Association has adopted a four-point program in the further advancement this year of its efforts to safeguard the health of mothers and new-born babies and to assist in the movement to reduce the maternity and infant mortality rate in Brooklyn Mrs Albert W Meisel, chairman of the division, announces

The four-point program is as follows

1 To assist the Committee on Maternal Welfare of the Medical Society of the County of Kings in the study of all maternal deaths as they occur in Brooklyn

2 To arrange groups in Brooklyn to be addressed by physicians on the subject, "What Constitutes Adequate Maternal Care."

3 To conduct classes giving instruction in pre-natal, infant and post-natal care to expectant mothers

4 To compile and maintain a current resource file on all maternity facilities in Brooklyn

Madison County

THE ANNUAL MEETING of the Madison County Medical Society was held at Hotel Oneida, in Oneida, on Oct. 27 The program "Appendicitis in Childhood," Dr C C Curtiss, Syracuse, N Y "Pernicious Anemia," Dr Ellery G Allen, Syracuse, N Y Illustrated by lantern slides and diagrams President's Address "Hematology," Dr R L Crockett, Director of Madison County Biological Laboratory, Oneida, N Y

An effort is being made to organize a Ladies Auxiliary

Monroe County

THE RISING PERIL OF THE drunken driver

was discussed before the Medical Society of the County of Monroe on Oct 13 by Dr Theron Wendell Kilmer, Hempstead police surgeon.

Declaring that "one of the greatest dangers on the highway is the drunken driver," Doctor Kilmer pointed out that state statistics show a 43 per cent increase in drunken drivers the first six months of 1936 over the same period in 1935

But how to tell when a driver is intoxicated is the problem that faces police officials, Doctor Kilmer continued "A driver who is but slightly drunk is as unfit to drive a car as one who is totally drunk," he insisted

"It is often a hard task for a physician to determine whether a person is drunk and no person, unless he be a physician, should be allowed to pass upon and render such an important decision," Doctor Kilmer asserted

"In some cities this is left entirely to the arresting officer This is wrong and gives neither the square deal The old saying that 'anyone can tell a drunk' is not true and if followed will lead only to a wrong conclusion"

Doctor Kilmer also cited the necessity for the examining physician's keeping a record, without which a defense attorney "makes the doctor feel very small" He urged the doctor to fill out a form card in the presence of the arresting officer and desk man at the police station He also urged that such records be preserved

"This card made out at the time of arrest," Doctor Kilmer pointed out, "while not admissible evidence at the trial, is used by the physician to refresh his memory When the attorney for the defense asks the doctor 'How do you know this man was drunk at the time?' the doctor replies that a person presenting the symptoms noted on the card is drunk"

Doctor Kilmer then showed and discussed the card used by the Hempstead police, a form which permits the examining physician to give in detail the symptoms noted when a driver is examined for intoxication.

He gave this warning

"Be careful! Do not let your municipality be sued for a large sum of money just because the suspect was pronounced drunk by the arresting officer The sure way of telling whether a person is drunk or not is to test the spinal fluid for alcohol This, of course, only can be done by a physician when a case is in the hospital"

"During the last month," Doctor Kilmer told his audience, "English physicians have been noting the effect of alcohol on the

driver of a car Results of their experiments show that in every case where a driver has been drinking the speed of the car invariably increases The judgment and co-ordination of the driver are greatly affected."

ROCHESTER ACADEMY OF MEDICINE has expressed its approval of the recently-adopted city ordinance muzzling unnecessary racket in the streets

Dr G Kirby Collier heads a committee of physicians which will co-operate with the Citizens' Committee of the Chamber of Commerce on Noise Abatement. Members are Doctors E J Avery, M A Barnard, L C Bohnton and G A Hilleman

The chamber plans to enlist the co-operation of automobilists and Parent-Teacher units throughout the city Henry Nicholson, member of the chamber committee, announced.

New York County

THE NEW YORK CITY Health Department has been furnishing the physicians free laboratory services for the diagnosis of syphilis and gonorrhea. It has also offered its personnel for consultation It now announces an additional important service made possible by Federal cooperation through the New York State Department of Health. Any physician may obtain free arsenicals and bismuth for a year of treatment in allotments of about four months at a time, and without regard to the economic status of the patients

This is done in order to secure a greater participation on the part of private physicians in the campaign against venereal disease. Application blanks for the drugs will be sent upon request by the Bureau of Social Hygiene of the Department of Health, 125 Worth Street

THERE HAS JUST BEEN inaugurated at the Meinhard Health Center, 131 East 101 Street, a program of public health instruction to be given jointly by the New York Medical College and the East Harlem Health District. This will soon be followed, says Commissioner John L Rice in *Neighborhood Health*, by the establishment of similar joint programs by the other New York City medical schools, namely, Columbia, (P & S), Cornell, New York University, (Bellevue), and Long Island Medical College. By means of this union of medical school and district health center, the students will observe at first hand community health work. They will also have an opportunity of personally taking part in this work Dr Rice adds that "This marks a long step forward in the teaching of preventive medicine."

Oneida County

MEMBERS OF THE Oneida County Medical Society were guests on Oct 13 at Broad-acres Sanatorium, where they had a business meeting after a turkey dinner

Dr Dan Mellen, Rome, conducted the meeting, at which Dr C H Baldwin read a paper on "Tuberculosis of the Bones and Joints" Dr A. R. Hatfield, Jr discussed the paper Dr J J Witt, Broad-acres, read a paper on "Tuberculosis in Children" and Dr William P Brown, heart and lung specialist of the State Department of Education, who stopped for the meeting while passing through Utica, discussed the subject, as did Dr T Wood Clarke. Dr F M Miller, Sr reported as chairman of the economics committee

At the annual meeting, January 12, officers will be elected and the president will deliver the address

SCIENTIFIC DISCUSSIONS occupied the attention of the Utica Academy of Medicine at a meeting in Hotel Utica on Oct. 15

Dr Donald Van Slyke, director of the Chemical Laboratory, Rockefeller Institute, spoke on "Tests of Renal Function." The discussion was led by Dr E G MacFarland and Dr R. C. Borst

Dr Oswald J McKendree, Utica State Hospital, presented a paper on "Congenital Syphilis in One of Two Identical Twins," and Dr H D Parkhurst opened the discussion.

The group adopted a new constitution, which is a condensed version of the former one. Dr E K. Reed, Rome, was accepted as a member Dr T Wood Clarke presided. About seventy-five physicians attended the meeting

Onondaga County

A COUNTRYWIDE CAMPAIGN to aid the reduction of maternal mortality is announced by Dr F J Schoeneck, chairman of the maternal welfare committee of the Onondaga Medical Society

The professional portion of the campaign will consist chiefly of a course of five sessions covering the newer developments in obstetrics and obstetrical care. A similar seminar will be conducted by the nurses' registry board for private nurses treating with the newer developments in obstetrical nursing

The lay portion of the program will open with a mass meeting early in January The meeting will be sponsored and arranged by the Women's Auxiliary of the Onondaga Medical Society, with representatives present from every social service and profes-

sional organization in the county. Members of the medical society will explain to the organization the part each individual must play in this campaign.

The county campaign is a part of the nationwide movement to improve the standards of maternity care in the United States.

THE SYRACUSE ACADEMY OF MEDICINE met at the University Club on October 20. The Scientific Program "Unusual Case of Jaundice," Dr G B Andrews, "The Significance of Low Marrow Reserve," Dr J Van Duyn 2nd, "Relation of Blood Pressure to Vomiting in Spinal Anesthesia," Dr J C Frey.

DR. FRANK REYNOLDS, of Syracuse, retiring from medical practice after nearly fifty years, and Mrs Reynolds, were given a testimonial dinner by staff members of Crouse-Irving Hospital on Oct. 15. Dr Reynolds has been associated with the hospital since its founding in 1912. Toastmaster for the dinner, at which sixty-four persons were present, was Dr H O Brust, chief of the hospital surgical department.

PARTICIPATION IN A maternal welfare mass meeting to be arranged for early in January was discussed at a meeting of the Women's Auxiliary to the Onondaga County Medical Society on Oct 16 at Hotel Onondaga.

Speakers included Mrs John L Bauer of Brooklyn, president of the State Auxiliary, and Dr O W H Mitchell of Syracuse. Twenty Auburn women, members of the Cayuga County unit, attended the luncheon and meeting.

Mrs Bauer came to Syracuse from Suffolk County, where she has been organizing an auxiliary. She is carrying on similar work in Madison County and will also visit Oneida and Monroe Counties in her organization work.

Orange County

DR. LESTER HOWARD MCALLISTER, physician in Port Jervis since 1910, died at his home Oct. 17. He was graduated from Bellevue Medical College in 1908, and during the World War served in the Medical Corps of the Army at Fort Sam Houston, Tex., and later overseas as regimental surgeon of the 56th Pioneer Infantry. He was discharged from the service in June 1919, at Camp Upton. He was a member of the American Legion, several fraternal and medical societies and had served as a member of the Port Jervis Board of Education. He was fifty-three.

Orleans County

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A few years ago Dr Scott celebrated his fiftieth year as a practicing physician and the occasion was observed by the Orleans County Medical Association, of which he was a past member. He was also an honorary member of the Medina Memorial Hospital staff.

Queens County

THE ANNUAL MEETING of the Medical Society of the County of Queens, with election of officers and annual reports, will be held on Nov 24 at 8 30 P M. There will be remarks by Mrs Irving Ponemon, President, Woman's Auxiliary to the Medical Society of the County of Queens, Inc., and an address by the President, James M Dobbins, M D.

Rensselaer County

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At the following meeting, on Nov 10, the papers that were read included "Carcinoma of the Colon," Dr Eugene F Connally, "Diagnosis of Chronic Infections of the Tonsils in Relation to Indications for Operation in Cases of Focal Infection," Dr Irwin Johnston, and "Chronic Osteomyelitis," Dr Leo S Weinstein.

It is expected that Dr George W Crile, of the Cleveland Clinic, will be present at the annual meeting in December.

A PLEA TO PARENTS to co-operate in continuing for Troy its remarkable record of six years without a single case of diphtheria is made by Dr Charles A Birmingham, city health officer.

In his statement Dr Birmingham calls attention to the fact that fall and winter weather is most favorable for the contraction of diphtheria and that parents should forestall the possibility of their children catching the disease by having them inoculated by their family doctor.

Richmond County

DR. EUGENE J. CALLAHAN, sixty-five, a practicing physician on Staten Island for forty-two years, died on Oct. 1 following a heart attack at the Grasmere Lodge, S. I. He lived at 19 Dongan St., West New Brighton.

Dr. Callahan was one of the founders of St. Vincent's Hospital in West New Brighton and was instrumental in the establishment of the first island-wide ambulance service. He practiced in Manhattan for two years before settling on Staten Island. He attended Manhattan College and was graduated from the New York University School of Medicine in 1894.

Dr. Callahan was a member of the Knights of Columbus and a director of the West New Brighton National Bank.

Rockland County

DR. ISRAEL S. WECHSLER, professor of neurology, Columbia University, was guest speaker at the Fall meeting of the Medical Society of the County of Rockland, held in Franklin Hall, Letchworth Village, on Oct. 14.

Dr. Wechsler gave an instructive talk on "Neuritis, Etiology and Management" before a group of society members and their guests following a brief business session at which arrangements were made to hold an annual meeting and banquet in December.

Mrs. Edward A. Flemming, organization chairman of the Woman's Auxiliary to the Medical Society of the State of New York, addressed the society on the formation of an auxiliary in Rockland County to be composed of the wives, daughters, and sisters of the physicians.

Saratoga County

DR. MALCOLM MAGOVERN of Saratoga Springs, Secretary, reports that the annual meeting of the Saratoga County Medical Society was held at the Metropolitan Sanitarium, Mt. McGregor, October 14. Election of officers was the chief business of the day. Those elected for the following year are Dr. W. S. McClellan, President, Dr. R. B. Post, Vice-president, Dr. M. J. Magovern, Secretary, Dr. W. J. Maby, Treasurer, Dr. G. S. Towne, Delegate and Dr. J. R. MacElroy, Alternate, Censors Dr. F. J. Sherman, Dr. A. Johnson, Dr. G. F. Goodfellow.

Dr. Burke Diefendorf, Glens Falls, district health officer for Warren, Washington, and Saratoga counties, told of the work of the public health nurse.

Tompkins County

THE REGULAR MEETING of the Medical Society of the County of Tompkins for October was held October 20, at the Tompkins County Memorial Hospital. Aside from routine business, three new members were admitted and the question of the formation of a Woman's Auxiliary to the Society was laid on the table for possible future consideration. After the business session, Dr. Anton W. Sohrweide of Syracuse and Ithaca gave an illustrated lecture on "The Diagnosis and Treatment of Some of the Commoner Skin Lesions."

THE NOVEMBER MEETING of the Medical Society of the County of Tompkins will be a combined one. On November 19, at 8:30 P. M. at the Memorial Hospital, Dr. Terry M. Townsend and Mr. Dwight Anderson of the Public Relations Bureau of the Medical Society of the State of New York will discuss various phases of the work of the Bureau. The Medical Societies of the Counties of Tioga, Schuyler, Oswego and Chemung have consented to send delegations to this meeting and it is expected that a large gathering will listen to this important and valuable discussion.

Warren County

ABOUT 150 PHYSICIANS and surgeons of Glens Falls and vicinity attended the dinner-meeting of the Glens Falls Academy of Medicine on Oct. 16 and heard Dr. E. B. Freeman of Baltimore discuss "The Practical Value of Special Diagnostic Methods in the Study of Digestive Diseases."

Yates County

THE DINNER-MEETING of the Yates County Medical Society on Oct. 12 was devoted to a discussion of the medical and hospital care of welfare cases. The meeting was attended by members of the society, Yates County Board of Supervisors, board of managers of Soldiers and Sailors Memorial Hospital and welfare officers of Yates County.

John T. Bishop, chairman of the Board of Supervisors, spoke of the position of the board in protecting the interests of taxpayers.

The physicians' side of the matter was presented by Dr. Allan W. Holmes, of Foster-Hatch Medical Group, who stated that most physicians are giving a great deal of medical care to relief cases without receiving any remuneration. He said that the doctors in Yates County gave in services and supplies much more than the taxpayers were ever called upon to pay them for services rendered.

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and the purpose of it. I say it is radically unfair to a doctor to have a demonstration sought to be made here under those circumstances.

Mr B Your Honor, if there is anything unfair with Dr M., I want to know where it is. I have had lots of experience with him.

The Witness Ditto.

Mr A. We ask an exception, and that the jury be instructed to disregard that very nasty statement just made by counsel.

Mr B I have got a right to answer that gentleman when he makes a proposition of that kind.

Mr A. I ask that the jury be instructed—

The Court These controversies between the lawyers and the witness are something not evidence in the case. The jury will disregard it. Go ahead.

The trial terminated in a verdict in favor of the plaintiff, and from the judgment an appeal was taken. The principal contention urged on behalf of the defendants was that the Court had abused its discretion in permitting the demonstration. It was argued that the attempt to raise her arm amounted to a physical combat in the courtroom, the plaintiff deliberately resisting the doctor and crying out with pain which may have been entirely pretended. Such a performance, it was claimed, necessarily aroused the sympathy of the jury toward Mrs P.

The Appellate Court determined that the Trial Court had in fact committed prejudicial error in ruling as it had, and directed a new trial of the case. In so deciding the Court said in its opinion:

While the Trial Court may, in its discretion, permit a plaintiff in a personal injury case to exhibit a limb that has been injured, where there is no wound and no reason for inciting the sympathy of the jury, we think it was an abuse of discretion for the Trial Court to permit a demonstration or experiment of raising the plaintiff's arm and permitting the plaintiff to cry out in pain. The condition of plaintiff's arm and shoulder had all been testified to, and both the plaintiff and Dr M. indicated that it would be painful for her to raise her arm, and counsel must have known that for the doctor to raise plaintiff's arm would give her pain and it would naturally be expected that plaintiff would cry out or complain of the pain.

Without suggesting that plaintiff was not acting in good faith, such a proceeding opens the door for simulation and has a tendency to arouse the sympathy of the jury for the plaintiff and possibly resentment against the defendant, and we think it was an abuse of discretion and error.

Fecal Concretion Confused with Rubber Tube

A physician who specialized in general surgery was called to the home of a woman forty-five years of age, complaining of ab-

dominal pains. He diagnosed the condition as acute appendicitis and arranged for her immediate entry into a hospital. Upon operation the doctor found a condition of ruptured appendicitis with spreading peritonitis and in closing the wound he left a rubber dam drain in the wound and packed the wound wide open with iodoform gauze. The patient's condition slowly improved and after a stormy course in the hospital she was sent home about two months after the operation. At that time the incision had not closed completely and there was slight drainage from the opening.

After her discharge from the hospital the patient returned to the surgeon at his office for dressings and examination and he treated her from time to time, a small sinus remaining open. The patient, after some time had elapsed, went away for a summer vacation and the doctor did not see her for a period of several months. She returned to his office in the fall and again he found that she had a small open sinus at the point of the old incision. The doctor at the time advised further treatment to promote healing of the sinus but she never made the necessary arrangements to undergo such treatment. The next he heard from the patient was when she came in during the early winter with the wound completely healed. At that time she accused the doctor with having left a piece of rubber tube within her body and made the claim that said rubber tube had come out through the sinus, that as soon as the same had so come out the wound had promptly healed.

Thereafter the patient instituted a malpractice action against the surgeon based upon the said theory of what had happened, it being alleged on behalf of the plaintiff that the foreign substance in question was a rubber tube or drain. Before the case was reached for trial a physical examination of the plaintiff was arranged and a disinterested surgeon at the time of the examination, examined the plaintiff herself and also made an examination of the alleged foreign body. It was his opinion after such examination that the claimed foreign body was not in fact made of rubber but that it was a fecal concretion which had in the ordinary course of things worked its way to the surface. The substance was hard and round about the size of a pea. The plaintiff and her attorneys apparently never learned the true nature of the substance until a day or so before the trial when a pathologist was called upon by them to make an examination of the substance and he reported that it was composed principally of calcium and was in all probability a fecolith.

During the course of trial, plaintiff's

Medicolegal

LORENZ J. BROSNAN, ESQ

Counsel, Medical Society of the State of New York

Evidence—Demonstration by Medical Witness

When a physician makes a physical examination of an injured person who is a party to a negligence action and subsequently gets on the witness stand to describe his findings, he may encounter various difficulties in the course of his testimony. In a case* just decided by the Courts of one of the Pacific Coast States, a ruling was made upon the extent to which a physician could be called upon to demonstrate his findings before a jury. The situation which developed during the trial of that case was one which should be of interest to every physician who in the course of his practice goes into Court to describe physical conditions found by him in the course of previous examinations or treatment.

The case was one in which two automobiles had collided at night at an intersection, and the occupants of one of the cars had received injuries. The plaintiff, a Mrs. P, brought suit against the owner and operator of the car which she claimed was in the wrong, and she charged in her complaint that she had sustained a permanently painful injury to her right shoulder which prevented her from raising her arm. The inability to raise the arm she alleged was permanent.

It appeared from the testimony upon the trial that x-rays to ascertain the nature of the injuries had been negative. At the request of the attorney for the defendants a certain Dr. M. had examined Mrs. P. shortly before the case went to trial. He was called as a witness and stated that he found that the plaintiff experienced considerable difficulty in raising her arm above a horizontal position and in moving it backwards. He described how when he had examined her he had taken hold of the arm and had been able to raise it, although she said at the time that that part of the examination hurt her. The crux of his testimony was when on cross-examination the Court, over objection of defendants' counsel, permitted the doctor to be required to demonstrate before the jury the raising of her arm. The following is a transcript of part of the record in connection with such cross-examination.

Q And now her shoulder and arm, you claim the arm can go up? A I claim I could put it up, and she wouldn't put it up herself, and said

she couldn't do it.

Q You could take by physical force and shove the arm up? A Yes, sir.

Q Now, the patient says she couldn't raise it? A Yes, sir.

Q Did you ever have that happen before in your practice? A Yes, sir.

Q Where there could be no physical reason for a practically certain, apparent result? A No, that is making it a little too strong, Mr. B.

Q Then change it to fit your particular experience? A I could cite personal experiences, a few years ago I had a serious condition of my own shoulder, came from infection, and mine wouldn't go up all winter—wasn't due to accident.

Q Doctor, under the same situation, yours wouldn't go up, and you couldn't put it up?

A No, mine wouldn't go up and I couldn't put it up.

Q Could anybody else put it up? A. I wouldn't let them, no.

Q Let the lady stand up, and you show this jury just what you—let me have your coat (the plaintiff stands up before the jury and removes coat). Now, doctor, will you just come down here, and before the jury show just what the woman can do herself, and what is necessary. A (interruption) Well, she can tell that without my being there.

Q You show the jury what you did, to satisfy yourself.

Mr. A. (defendant's counsel) If the Court please, I object to this demonstration, it has only one purpose, that is perfectly obvious to Your Honor. The plaintiff herself has testified that the arm could be put up there, but she couldn't put it up. The doctor has so testified. This demonstration has no purpose except to try to make an impression here—to create prejudice in the case. I certainly think it is highly prejudicial.

Mr. B. If your Honor please—

The Court. It is part of the cross-examination.

Mr. A. I grant you it is part of the cross-examination, Your Honor, but it serves no useful purpose in the case for the lady to wince here and show pain while the doctor is manipulating her arm. I don't see what purpose that serves, the doctor does not say that she has not pain under those circumstances.

The Court. He may go ahead.

Q (by Mr. B.) Doctor, show the jury just how you examined that arm. (The doctor descends from the witness stand and demonstrates before the jury the raising of plaintiff's arm at which the plaintiff cries out.)

The Witness. She is deliberately holding back today, in addition to what she did in my office. I had no difficulty then.

Mr. A. Your Honor sees the object of this,

* *Peters v. Hockley*, 53 Pac. 2nd 1059

Across the Desk

The New Drive to Stamp Out Syphilis

AN INCIDENT WAS RELATED in these pages not long ago in which four members of a family of six were innocently infected with syphilis by a wayward daughter who loaned her chewing gum to the other children and kindly chewed bread till it was soft for baby. Baby infected mother, who infected father, and there was almost a divorce in the family until the wise physician investigated, found the truth, and started treatments for recovery.

More than fifty per cent of the cases of syphilis, indeed, are said to be contracted innocently. Seventeen cases in this state were recently traced to a high school party where kissing games were played. Infection has been communicated in the rough scrimmage of football. Drinking from contaminated cups and glasses is undoubtedly a fruitful source of contagion.

Bring it Out into the Open

What this means is that syphilis is no longer a disease to be hidden away and covered up, like a guilty secret, and when the public is convinced of that fact, then we shall have it out in the open where we can wage a fair fight, and its doom will be certain. As things stand now, its prevalence is little short of appalling. Experts figure that one in ten of our population is afflicted with *Treponema pallidum*, the colorless little corkscrew devil that causes syphilis and all its tragic sequelae. Syphilis is said to kill three times as many as tuberculosis in our land every year, with a toll of 100,000, not counting the many heart fatalities due primarily to it. One in every ten patients in the mental hospitals owes his trouble to its insidious devastation of the system. A sure sign of its growing seriousness is the increasing number of papers and earnestness of discussion about it at the medical meetings and in the pages of the medical journals.

See What Others are Doing

Yet we have only to look across the Atlantic to see countries far less rich and powerful than our own which have practically conquered this dread plague. With

great wisdom, New York City appointed a Commission to investigate the prevention and control of syphilis and gonorrhea in the Scandinavian countries and in Great Britain, and it has now made its report. The Commission is made up of Dr. John L. Rice, Commissioner of Health of the City of New York, Dr. David J. Kaliski, representative of the Five Counties Medical Society of Greater New York City, Dr. Thomas P. Farmer, representative of



THE NEW YORK CITY COMMISSION

Dr. David J. Kaliski, Dr. Thomas Parran, Jr., Dr. Thomas P. Farmer, and Dr. John L. Rice

the State Medical Society, and Dr. Thomas Parran, Jr., Surgeon General of the U. S. Public Health Service, formerly Commissioner of Health of this State, who accompanied the Commission and participated in its studies. The report was compiled by Dr. Charles Walter Clarke, Director of the Bureau of Social Hygiene of the New York City Department of Health. Clearly nothing could be more authoritative.*

Different Tactics, Different Results

The briefest glance at the report reveals a striking difference between the Scandinavian and the British treatment of syphilis, and shows perhaps why the Scandinavians have had so much better success. In Great

* Copies of the complete report, which was published as a supplement to the *American Journal of Syphilis, Gonorrhea, and Venereal Diseases*, July, 1936, may be obtained upon request from the Division of Social Hygiene, New York State Department of Health, Albany.

attorneys changed from the theory that the defendant had negligently permitted a piece of rubber to remain in the plaintiff's body to a charge that the defendant had been negligent in failing to find the piece of fecal concretion on certain occasions when the wound was probed by him, and that proper practice would have required him to have managed in some manner to remove the fecal concretion months before it spontaneously came to the surface. The defendant and his witnesses, however, testified that the defendant followed good judgment and proper practice throughout his care of the case. At the close of all the testimony the Court directed judgment in favor of the defendant thereby exonerating him of the charges of malpractice.

Treatment of Infected Thigh

A physician was called to attend a five year old child and on examination found that she was suffering from an infection of the thigh. He arranged to have her promptly put in a hospital and there under a general anesthesia opened up the infected area releasing pus and established drainage. The following day the child was in satisfactory condition to be taken home and the doctor continued seeing the case from time to time.

About two months after the operation the child was brought to the doctor and it was explained that she had again fallen and injured the same leg at the site of the old scar. Examination showed that the old wound was lacerated. He dressed the lacerations and gave a prescription for syrup-iodide of iron and Fowler's solution by mouth. The doctor continued the care of the case, redressing the wound, and while the patient was so under his care she developed fungus growths over the body. He applied wet dressings for the purpose of treating said growths but the child did not improve and the doctor arranged that the child again enter a hospital. However, while at the said hospital the patient went under the care of another physician.

When the doctor instituted an action

against the parents of the child for the purpose of endeavoring to collect his fee for professional services rendered, a counterclaim was interposed in which the charge was made that the treatment which the defendant had rendered had been the cause of the development of the fungus growth.

The case was tried before a Judge and Jury and the defendants were unable to establish that the treatment which the doctor had administered to the child had been the cause of the complications. Therefore, at the close of all the testimony the counterclaim was dismissed upon motion and a directed verdict in favor of the doctor was granted for the full amount of his bill.

Accident During Application of Acid

A six year old child was brought to the office of a general practitioner by his mother, who complained that the boy was suffering from a rash. The doctor examined him and found his condition to be molluscum contagiosum, which particularly affected his chest, abdominal wall, one thigh, and his face. The doctor proceeded to curette the lesions on the body, using a skin curette and that treatment was carried out with satisfactory results.

The doctor then undertook to apply trichloroacetic acid to the lesions on the child's face. He used a wooden applicator tipped with cotton and just as he was about to apply the acid the child's mother loosened her hold on the child and he suddenly raised up and his nose came in contact with the acid on the end of the applicator. Although the doctor applied bicarbonate of soda immediately a superficial burn developed which the doctor treated and the child was brought in three days later. The patient was never brought back to the doctor for any further treatment.

Some time later a malpractice action was brought against the doctor charging him with negligence in treating the child. Plaintiff's attorney, however, failed to place the case on the calendar for trial and in due time the action was dismissed upon defendant's motion.

At the request of the American Society for the Control of Cancer, a fifteen minute program has been arranged through WJZ and the blue network of the National Broadcasting Co., November 20, 3 00 P M.

The speakers will be Mrs. Grace Morrison Poole, Chief Advisor to the Women's Field Army and Dr. C. C. Little, Manag-

ing Director of the American Society for the Control of Cancer.

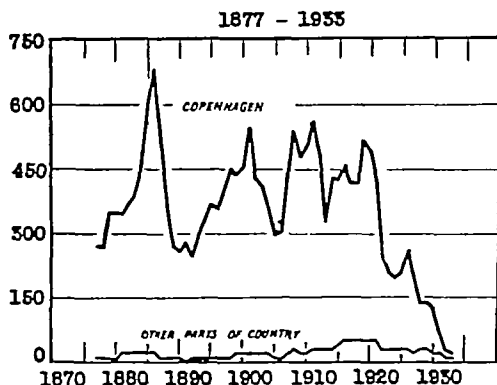
This program will be given in dialogue. It has been scheduled by the New York Tuberculosis and Health Association under the auspices of the Medical Information Bureau of The New York Academy of Medicine.

order to enable private physicians to care for a larger number of patients having syphilis, especially that large body of individuals who cannot pay the full regular fee, the Department of Health plans as soon as possible to provide neoarsphenamine, bismuth or mercury in amounts sufficient for one year of the treatment in accordance with modern therapeutic methods. These drugs should be supplied free upon request without distinction as to the patient's ability to pay the physician a full fee or any fee for his service. * * * * Because the funds when available for this purpose are expected for the present to be limited, drugs will be provided to private practitioners only for the treatment of early syphilis, syphilis in pregnancy, and congenital syphilis. Later it is hoped that the same assistance may be extended to all cases of syphilis found under private medical care."

Physicians will be aided by the Health Department to find the source of infection in each case, a plan that is proving encouragingly successful. Every victim of syphilis or gonorrhea, too, is given a pamphlet of instruction with regard to his infection and the protection of contacts. Doctors are urged to cooperate by reporting every case.

"We cannot transport to America any European plan, successful as it may have been abroad," remarked Dr Clarke, who compiled the report on the Scandinavian and British plans. "We must draw up our own blue-prints and build our own public health

structure." Sweden and Denmark may afford us useful hints, and show us fundamental principles. "But what we need for New York, we contend, is a New York Plan—one that is based on the essential medical data, but nicely adapted to our par-



Cases of acquired syphilis per 100,000 population in Copenhagen and other parts of Denmark, 1877-1933

ticular social and medical institutions and conditions * * * * Without expecting miracles, but anticipating that the changes will be indicated as we progress, we believe that a start in the right direction has been made, and that, with the coöperation of our colleagues in private practice and in hospitals, we will, if we persevere, see a radical reduction in the prevalence of syphilis and in the disasters which it causes"

THE RACE OF DOCTORS AND PATIENTS

In proportion to the total population, there are fewer physicians practicing in the United States, today, than there were twenty years ago, although in actual numbers there are now about 20,000 more legally qualified physicians in the country than were registered in 1916. In that year there was one physician for every 694 persons in the entire population, in 1936 there was one

doctor for every 778 persons, according to figures in the *Statistical Bulletin* of the Metropolitan Life Insurance Company. In New York State, however, an opposite trend appears. In 1916 there was one doctor for every 633 persons, and, in 1936 one for every 539. In the borough of Manhattan there are only 287 persons per physician.

WHY IS IT?

The surgeon will write a prescription
In scrawlings and symbols most weird,
So even the druggist looks puzzled
And mutters down into his beard
But when the physician is ready

To tell the amount of his bill
He types out a neat little statement
So certain it gives one a chill

—James A. Sanaker in *Country Gentleman*

Britain its prevalence has been cut to one-half what it was in 1920, or 20,692 cases treated in 1934 as against 42,805 in 1920. In the three Scandinavian countries, however, the authorities were notified of less than 1600 cases in 1933, in a population of 13,700,000. At that figure, it can be said that it has ceased to be a problem.

The difference between the British and the Scandinavian tactics is that in Great Britain no legal control over the patient is exercised, entire dependence being placed upon free clinic treatment for all, while in Scandinavia all sources of infection are ascertained, and treatment, while gratis, is compulsory. In Copenhagen the results seem almost miraculous. From 1919 to 1933 the number of cases of acquired syphilis in that city dropped from 3000 yearly to less than 200, "an actual decrease in cases which, it is stated, cannot be equalled by any other metropolis in the world."

Sweden, as a whole, however, shows better results than Denmark. In Sweden "syphilis has decreased in prevalence to the point where one may refer to it as almost a rare disease, there having been reported in 1934 only one new case in 14,000 population, a case rate of seven per 100,000 population, as compared with a case rate of twenty per 100,000 in Denmark."

How Sweden Does it

Sweden's plan, then, is worth our attention. It requires that all persons having syphilis, gonorrhea, or soft chancre in an infectious stage must submit to treatment. If any patient fails or refuses, he is hailed to the hospital by the police, but this is seldom necessary. Treatment is free, and the cost is borne by the state. Medical practitioners must report every case, and discover and report the sources of infection, a point strongly insisted upon. The precipitous fall of syphilis noted above has followed the adoption of this plan in Sweden and very similar programs in Denmark and Norway. Several causes are given credit. "First and foremost are believed to be the basic scientific fact that treatment renders syphilis non-infectious and the fact that in all of these countries diagnosis and treatments are free, accessible, and generally good." It must be noted that the conquest of syphilis has not been duplicated in the battle with gonorrhea, perhaps because it is not so easily made non-infectious.

The question arises, then, whether we can follow Scandinavia's example, or must be content with a more voluntary and ineffective control like Great Britain's. In such a comparison, remarks the Commission, "our policy and practices more nearly resemble those of the Scandinavian countries, for we have all the legal powers of those countries to deal with syphilis and gonorrhea as communicable diseases." True, we have not facilities for treatment free to all, but "the critical problem in America may be said to be that of overcoming these obstacles, and bringing all infectious cases of syphilis and gonorrhea, regardless of economic status, under medical care."

New York Starting a Big Push

New York City is starting a vigorous offensive, to judge from an address delivered a few days ago by Dr. Clarke before the annual convention of New York State Nurses at the Hotel Pennsylvania. There are now 378,000 cases of syphilis in the city, he said, and each week about 1000 newly diagnosed cases are reported to the Health Department. His estimate is that about five per cent of the population is affected which seems more credible, and is certainly more comfortable, than the ten per cent estimate of other statisticians. He appealed, in his address, to the 14,000 licensed physicians of the city to act as "shock troops" in the battle with this scourge, for "private practitioners collectively see or have the opportunity to see more cases of syphilis than all the institutions combined. More general use of modern diagnostic procedure would lead to the discovery of many thousands more cases of syphilis and the treatment of these cases to the enormous benefit of the public health and the profit of the profession."

"Do we know enough about syphilis to eradicate it?" he asked, and "if so, can our knowledge be applied practically?" "I believe," he averred, "the answer to both of these questions is in the affirmative."

Its five-point Plan

The program of New York City is of interest to the entire state, to follow New York's example, or to better it. In this program, the Health Department, first of all, offers to perform serologic tests for syphilis without charge. Some 215,000 specimens were tested last year. Next, "in

Detachment of the Retina Operative Technique in Treatment. By J Cole Marshall, M D Octavo of 80 pages, illustrated New York, Oxford University Press 1936 Cloth, \$2 75

This small book of 80 pages is essentially a bird's eye view of the development of the operative technic employed in the cure of retinal detachment in the past six years. As an Englishman the clinics on the Continent, in which so much of the pioneer work has been done, have been readily accessible to him. So he has thus been fortunate in seeing for himself the work of those with whose written descriptions most of us in this country must be content. In this way he has obtained first hand information from Gonnin, Safar, Weve, Vogt, Larsson, etc.

He gives a brief resume of the history and general examination in a case of attachment, and a more detailed description of the important matter of locating and localizing the retinal tear, with ocular measurements, special charts, etc.

Thermopuncture is fairly fully described, Guist's chemical cauterization more briefly, and most fully the various diathermy puncture methods, as well as the surface coagulation of Weve and Larsson. A point of especial interest is the fact that in Weve's operating theater every one wears black and all towels, etc. are black, to facilitate ophthalmoscopic observance in the progress of the operation.

The special apparatus and instruments devised and used by various surgeons are mentioned and many of them pictured. The closing chapter is a short description of the technic of electrolysis for the cure of this affection, as advocated by Vogt and by von Szily.

Throughout, one is struck anew by the need for careful, painstaking and thorough methods in the diagnosis, analysis, localization and operative technic in the attempt to cure this serious affection of detachment of the retina.

E. CLIFFORD PLACE

Basal Metabolism in Health and Disease. By Eugene R. DuBois, M D Third edition Octavo of 494 pages, illustrated Philadelphia, Lea & Febiger 1936 Cloth, \$5 00

The third edition of this work by one who may proudly trace his descent from Graham Lusk to Lavoisier, again brings to the medical profession a clear and simple explanation of the physiology of metabolism and its derangement in abnormal and pathological states. The essential processes are adequately discussed and controversial subjects are presented in a logical and entirely impersonal manner. The chapters on sur-

face area and normal standards have been largely rewritten in the light of recent contributions, and the suggestion advanced that the normal standards may soon undergo change. A chapter on the mechanism of the loss of heat from the body has been added. Other additions are a section on tissue metabolism, discussion of the etiology of thyroid disease, a section on creatin metabolism, and a presentation of the subject of thyroid ablation for cardiac disease.

This book should be added to the library of every practitioner of medicine.

CHARLES S BYRON

Medical History of Contraception. By Norman E. Himes, Ph.D Octavo of 521 pages Baltimore, Williams & Wilkins Company 1936 Cloth, \$7 00

The average person probably believes that birth control is of very recent origin. Dr Himes shows us that this belief is entirely wrong. His book teaches us that contraceptives have been employed from the very early ages.

Perhaps one of the most striking features of this first thorough study of the subject, is that ancients and moderns both strive to control fertility by artificial means. It has long been known that the ancients had a horror of sterility, but it is not common knowledge, that they attempted to limit an excess of progeny.

Dr Himes' study of the subject has been most exhaustive, and his book is of outstanding interest from the medical, sociological, and historical viewpoints.

W SIDNEY SMITH

An Introduction to Surgery. By Rutherford Morison, M D and Charles F M Saint, M D Third edition Octavo of 367 pages, illustrated Baltimore, William Wood & Company 1935 Cloth, \$5 00

This is the third edition of a volume that has been quite popular in some of the British medical schools. Both authors are teachers of surgery and have incorporated in this volume the general principles of surgery with drawings and actual pictures.

The various subjects are treated in a didactic and elemental manner that makes the book essentially one for the undergraduate student of surgery.

An attempt is made throughout the volume to simplify and portray the very basic principles of surgery. Surgical conditions, such as shock, hemorrhage, inflammation, etc. are discussed in a simple manner. The authors emphasize for the student the importance of appreciating the natural resources that the patient can produce in a cure of the various surgical conditions and cite case histories as illustrations.

Books

Books for review should be sent directly to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

RECEIVED

Pitfalls in General Practice By H Ameroy Hartwell, M D Octavo of 23 pages Published by H Ameroy Hartwell, M D, 1935 Paper

Eight Sinners in Four Acts The Great Living Tragedy By H Ameroy Hartwell, M D Octavo of 26 pages, illustrated Published by H Ameroy Hartwell, M D, 1935 Paper

International Clinics A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc Edited by Louis Hamman, M D Volume 3, 46th Series, 1936 Octavo of 339 pages, illustrated Philadelphia, J B Lippincott Company, 1936 8 vol Cloth, \$3 00

Principles of Chemistry An Introductory Textbook of Inorganic, Organic and Physiological Chemistry for Nurses and Students of Home Economics and Applied Chemistry By Joseph H Roe, Ph D Fourth edition Octavo of 475 pages, illustrated St Louis, The C V Mosby Company, 1936 Cloth, \$2 75

Fundamentals of Human Physiology By the late J J R. Macleod, M B and R J Seymour, M D Fourth edition Octavo of 424 pages, illustrated St Louis, The C V Mosby Company, 1936 Cloth, \$2 50

Principles of Biochemistry By Albert P Mathews Octavo of 512 pages, illustrated Baltimore, William Wood & Company, 1936 Cloth, \$4 50

Sex Behavior in Marriage By Charles A. Clinton, M D Duodecimo of 159 pages New York, Pioneer Publications, Inc., 1935 Cloth, \$2 00

Oral Diagnosis and Treatment Planning A Text for the Dental Student, A Reference Book for the Practitioner and Medical Student. By Kurt H Thoma, D M D Octavo of 379 pages, illustrated Philadelphia, W B Saunders Company, 1936 Cloth, \$6 00

A Textbook of Obstetrics By Edward A Schumann, M D Octavo of 780 pages, illustrated. Philadelphia, W B Saunders Company, 1936 Cloth, \$6.50

Starling's Principles of Human Physiology Seventh edition edited and revised by C Lovatt Evans, F.R.C.P. Octavo of 1096 pages, illustrated Philadelphia, Lea & Febiger, 1936 Cloth, \$8 75

A Text-Book of Pharmacology and Therapeutics or the Action of Drugs in Health and Disease By Arthur R. Cushny, M D Eleventh edition thoroughly revised by C. W Edmunds, M D and J A Gunn, M D Octavo of 808 pages, illustrated Philadelphia, Lea & Febiger, 1936 Cloth, \$6 50

The Riddle of Woman. A Study in the Social Psychology of Sex. By Dr Joseph Tenenbaum Octavo of 477 pages New York, Lee Furman, Inc., 1936 Cloth, \$3 50

To Raise These Halt. By Fred Rothermell Octavo of 350 pages New York, Lee Furman, Inc., 1936 Cloth, \$2 50

ORDERING BOOKS

As a service exclusive to our readers books published in this country may be ordered through the Business and Editorial Offices of the Journal (33 W 42nd St., N Y C) postage prepaid Order must be accompanied by remittance covering published price.

REVIEWS

An Index of Differential Diagnosis of Main Symptoms by Various Writers Edited by Herbert French, M D Fifth edition Quarto of 1145 pages, illustrated. Baltimore, William Wood & Company 1936 Cloth, \$16 00

When one reads the publisher's advertisements, there is a tendency to resist the statements set forth, but as regards this book, they may be accepted without reservation. The "most valuable single volume in all Medical Literature," is powerful praise, but in the opinion of the reviewer, is justified in this case.

This edition appears seven years after the fourth and has the same general arrangement, the articles on the various symptoms

being placed alphabetically. The methods of distinguishing between the various diseases in which each symptom may be observed, are described in detail and the general index at the end, of over 200 pages, is a remarkable achievement giving 90,000 references to symptoms.

The illustrations are so excellent that one may sometimes make a diagnosis in an unusual condition unobserved before by the reader. There have been other books following a similar arrangement, but this one is in a class by itself. It is indeed as Richard C Cabot states, "altogether a masterpiece."

W E. McCOLLUM

Glandular Physiology and Therapy A Symposium Prepared Under the Auspices of the Council on Pharmacy and Chemistry of the American Medical Association. Octavo of 528 pages. Chicago, American Medical Association. 1935 Cloth, \$2 50

A series of articles published in the *Journal of the A.M.A.* last year are grouped together in this volume. Intended for the use of the general practitioner, this symposium falls considerably short of its purpose as a guide in the recognition of endocrine disorders and as a help in the selection of appropriate therapeutic procedures. It is of value only to those who seek condensed information of endocrine physiology with references to the most important contributions in the field of glandular research. Most of the chapters are ably written by recognized authorities of the subject matter, others, particularly the chapter on the adrenal medulla, are singularly one-sided and weak.

M. A. GOLDZIEHER

Time of Ovulation in Women. A Study of the Fertile Period in the Menstrual Cycle. By Carl G. Hartman. Octavo of 226 pages, illustrated. Baltimore, Williams & Wilkins Company. 1936 Cloth, \$3 00

Endorsed by the opinion of others, the author has presented, in this small volume, a sound survey of the present knowledge of the subject. His reputation in the field of research is well known and the interest with which he draws his conclusions is outstanding. The text is easily read and the material is presented in an interesting manner.

More and more the physician is called upon in this day to impart to patients the knowledge of the so-called "safe period." It is well that he substantiate his understanding of the subject by details of the facts contained in this volume.

As to his own opinion on the subject, the author tritely suggests in his closing paragraph—"the opponents of the Safe Period are more and more placed on the defensive as new facts accumulate."

WILLIAM C. MEAGHER

The Adrenals. By Arthur Grollman, M.D. Octavo of 410 pages, illustrated. Baltimore, The Williams & Wilkins Company. 1936 Cloth, \$5 00

The keen interest aroused by the discovery of the cortical hormone and the increasing clinical significance of adrenal physiology justifies the publication of this learned and well written monograph. It is unfortunate, however, that the author—an eminent pharmacologist—had to deal with questions pertaining to pathology and clinical medicine with which he had apparently no personal contact. Hence many statements

are based on second-hand information. Other important points are ignored, especially when at variance with the author's personal views. Grollman's concept of the tripartite nature of the adrenal, and of his "androgenic" tissue are interesting hypotheses at best, and should not have been presented with such certainty. Nor does the author's technical contribution to the purification of the cortical hormone justify his condescending attitude towards earlier investigators. A relatively short and selected bibliography completes the book, which is too technical to appeal to the practising physician.

M. A. GOLDZIEHER

A Yankee Saint. John Humphrey Noyes and the Oneida Community. By Robert A. Parker. Octavo of 322 pages, illustrated. New York, G. P. Putnam's Sons. 1935 Cloth, \$3 75

This book is a biographical description of John Henry Noyes and his Oneida Community, a remarkable company of humans which created a sensation in the middle of the last century, owing to their peculiar manners and customs, which were at wide variance with the generally accepted ideas of society at large. In it, as one critic remarks, "the reader is presented with a full-length portrait of an indomitable Don Quixote of the spirit, and a whole gallery of eccentric and fascinating characters." His was a regime of christian communism, which extended to the most intimate relations of life, including "complex marriage," based on "male continence."

He claimed to have made a scientific contribution to the technique of birth control, and an attempt was made to inaugurate a system of procreation, or "stirpiculture" in the Community. His eugenic theories are said to agree remarkably with those of today. Havelock Ellis is quoted as regarding Noyes "a very great figure, one of the noblest pioneers America has produced." Bernard Shaw and H. G. Wells also pay tribute to the extraordinary independence and logical persistence of Noyes and his Community in adhering to the tenets of his cult, not only in expression, but action.

The book is well written and historically interesting, not only as a record of a peculiar sect, but also of the reaction of the public at large, and the church in particular, to the activities and practices of a community in which sex-life was a dominating feature. The book offers little for the general practitioner, but it should interest psychiatrists and those specially interested in eugenics. In many ways it reads like a novel with a historic background.

J. M. VAN COTT

One chapter of the book is devoted to natural cures. Most of the cases cited however are those of gall stones.

For the undergraduate this volume can be used as a supplement in teaching the basic elements of surgery.

HERBERT T WIKLE

Examination of the Patient and Symptomatic Diagnosis By John Watts Murray, M D Second edition Octavo of 1219 pages, illustrated St. Louis, The C V Mosby Company 1936 Cloth, \$10 00

The second edition of this very helpful work has increased its value to the general practitioner by placing a greater emphasis upon "the common ailments which may endanger life and always are a serious source of worry and annoyance to the patient." The author very properly stresses the importance of a thorough history as a "necessary prelude to a first class diagnosis." And yet in the outline of the "Schedule for Preliminary General Examination" there are approximately two hundred thirty-eight items to be noted. One doubts its practicability without reflecting on its usefulness.

This is a book that should be close at hand at all times and the more frequently the younger practitioner consults its pages, the firmer will be his foundation for correct diagnosis.

S R BLATTEIS

Atlas of Human Anatomy By Jesse F Williams, M D Octavo of 64 pages, illustrated New York, Barnes & Noble, Inc 1935 Cloth, \$2 00

Thirty-two pages written in clear, non-technical language for the layman, cover the minimum essentials of anatomy and physiology of the human body.

There are 27 pages of illustrations in eight colors and labelled both in English and in the Basle Anatomical Nomenclature. These charts are the first of their kind done in this country and are real works of art. They are clear, accurate and well labelled.

DAVID KERSHNER

Röntgenology the Borderlands of the Normal and Early Pathological in the Skiagram. By Alban Kohler, M D Second edition. Quarto of 681 pages, illustrated. Baltimore, William Wood & Company, 1935 Cloth, \$14 00

The first English edition of this book was in recent years the only complete discussion of the normal and early pathological findings in Röntgenography in American literature. This book is almost encyclopedic in character and is the outstanding study and reference book of its type. The present second revised English edition has been

brought up to date (to the Summer of 1935) by a complete review of the German, British and American literature. The additions are too numerous to be detailed here. While there is no discussion of the special contrast and other recent techniques of Röntgenography, this book should really be obtained as one of the bases of a Röntgenological library. It is undoubtedly one of the best X-ray books that the reviewer has ever read.

E. MENDELSON

Surgical Emergencies in Children. By Harold C. Edwards, M S Octavo of 274 pages, illustrated Baltimore. William Wood & Company 1936 Cloth, \$4 50

Printed in clear type and quite readable this small volume should be a welcome addition to the library of the surgeon.

The section devoted to the gastro-intestinal tract is quite complete and the treatment outlined conforms with the accepted procedure.

Our local "flu-belly" peritonitis is recognized as influenzal peritonitis and the danger signals set against too early operation. We stress, however, the ever present danger of confusing flu-belly with acute appendicitis. For anesthesia in emergent operations in children the author favors gas-oxygen in preference to the safer and equally efficient open drop ether. While sketchy in places the book fully meets the requirements of its title.

STANLEY B THOMAS

Pediatric Nursing By John Zahorsky, M D Assisted by Beryl E. Hamilton, R N Octavo of 568 pages, illustrated St. Louis, The C V Mosby Company 1936 Cloth, \$3 00

This is a book of 568 pages with 144 illustrations and 7 colored plates. These facts alone place it in a class by itself and before reading, one wonders whether the essentials of pediatric nursing could not be given in less space. After reading, however, one appreciates that the questions at the end of each chapter are a valuable part of the book, and add to its extent. The glossary and index help to do the same.

It is a good text-book for undergraduate nurses and will give a postgraduate course in pediatric nursing to the one who wants to keep up to the minute in infant and children's nursing.

It is refreshing after the recently attempted theoretical confusion in classification of tuberculosis to find the author makes the practical clinical classification of 1 Infantile type 2 Juvenile type 3 Adult type. 4 Extrapulmonary tuberculosis.

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Histology By S Ramón-Cajal, M D Revised by J F Tello-Munoz, M D, authorized translation from the tenth Spanish edition by M Fernan-Nunez, M D Octavo of 738 pages, illustrated Baltimore, William Wood & Company, 1933 Cloth, \$8 00

Ramon-Cajal's text-book of Histology is of interest as a pedagogical effort of one who has international recognition as an investigator in this subject His ripe scholarship is evident in many of its parts

The book has a mature viewpoint with many references to the leading investigators in various fields, and to a variety of techniques It is a question to be decided separately for each school whether it is best to present so much material to the medical student, or whether a somewhat more elementary and shorter exposition of the subject would be more suitable.

There is an introductory section of over a hundred pages that has the value of stressing the plasticity and activity of the living cell It seems that the order of this section might have been improved by some such sequence as,—cell structure, cell chemistry, the living in contrast to the dead cell and cell relations Some of the discussion of new human material in this section seems not necessary for most American medical students as they will have met its equivalent in their previous biological courses

In the sections on muscle, connective tissue and the nervous system, the author's thorough acquaintance with the results of metal impregnation and related methods is clearly shown It would have been well had there been in these sections, a clearer distinction made between structures which have been seen in the living cell and those which have only come to light by the use of techniques which may have profoundly changed the organization of the dead remnants of cells to which they were applied

The book has many useful illustrations

EDGAR D CONGDON

The Early Diagnosis of Malignant Disease. For the Use of General Practitioners By Malcolm Donaldson, F.R.C.S., Stanford Cade, F.R.C.S., William D Harmer, F.R.C.S., R. Ogier Ward, F.R.C.S., and Arthur T Edwards, M D Octavo of 168 pages New York, Oxford University Press 1936 Cloth, \$3 00

Several authorities have collaborated in the writing of this brief work. The intent is to provide the general practitioner with such facts as will enable him to more readily recognize or suspect malignant disease in an earlier stage.

Choice phraseology leave imprints never to be forgotten "Early diagnosis of mammary carcinoma should be made with the mind's eye first, the microscope next, and with the hands, eyes and nose, if ever, last", "Differential diagnosis of early carcinoma does not depend on the absence of

signs of advanced carcinoma, but in the similarity between early carcinoma and benign lesion"

Aphorisms are generously distributed throughout the text "The necessity of early thorough investigation of any bleeding from the genito-urinary tract", "The importance of diagnostic curetage in every patient suffering from post-menopausal bleeding", "The importance of suspecting carcinoma of the larynx in men past 40 with persistent hoarseness", "The commonest early sign of carcinoma of the rectum is irregularity of the bowel", "No case of rectal bleeding should be labelled piles without a thorough investigation"

The book deserves a wide circulation

HARRY MANDELBAUM

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc. Volume 1, 46th Series, 1936 Edited by Louis Hamman, M D Octavo of 314 pages, illustrated. Philadelphia, J B Lippincott Company 1935 Cloth, \$3 00

This volume includes articles of interest in medicine and surgery Simmonds disease is reported in a patient observed over a period of twelve years with careful study Fever in heart disease, of infectious and non-infectious origin is presented. Soma Weiss has given a careful review of the uses and dangers of various sedatives and hypnotics Basal pulmonary tuberculosis and pulmonary embolism are well presented A complete review of portal hypertension is given There is a review of the progress of surgery in 1935 This issue of the Clinics upholds the high standard and value of this publication. HENRY M MOSES

Cardiac Output and Arterial Hypertension. By Sidney A. Gladstone, M D Octavo of 56 pages, illustrated New York, Sidney A Gladstone, 1935 Cloth, \$1 00

This little volume of 56 pages is an attempt on the part of the author to clarify the relationship of arterial hypertension to kidney disease He combines the views of various observers into a simple and logical hypothesis Arterial hypertension results from an adaptation of the circulation to a pressure level sufficient to meet the needs of glomerular filtration. The heightened pressure level is due to a pressor substance which enters the blood in increased amounts when there is obstruction to the urinary flow The pressor substance is formed in the cells of the proximal convoluted tubules and enters the blood through the thin-walled portion of the loops of Henle. The pressor substance is a chemical substance which is synergistic with adrenalin The author does not name guanidin as the offending chemical substance. SIMON FRUCHT



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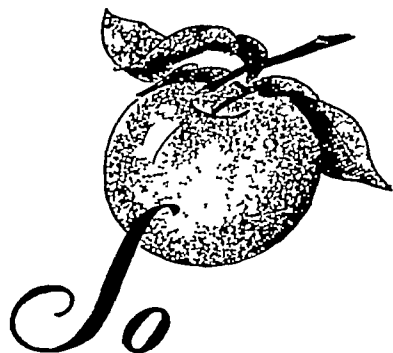


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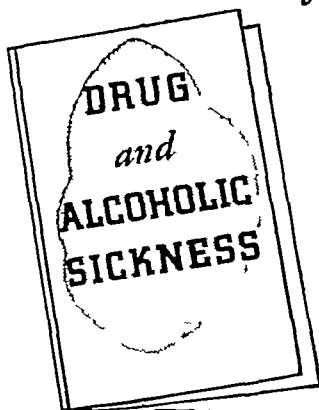
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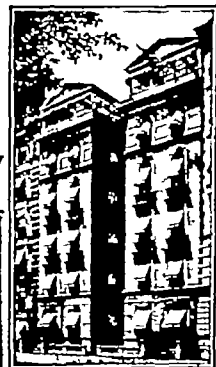
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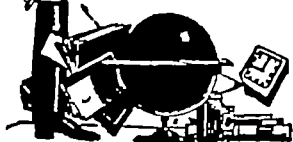
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The Bermudas are named after Juan de Bermudez, who discovered them prior to 1511. In 1609, Admiral Sir George Somers and a party of Virginia colonists were wrecked near the site of St. George, eventually continuing their voyage to Jamestown. After Somers returned to Bermuda and died there, the islands were colonized, in 1612, by the Virginia Company, succeeded by the Bermuda Company. In the Somers Gardens at St. George are two memorials to the Admiral. Bermuda is the oldest self-governing colony in the British Empire, and its Parliament the oldest law-making body, excepting only the Mother Parliament in London. The Bermuda Parliament consists of the Governor and Commander-in-Chief, always an officer of the British army, nine members of the Legislative Council, appointed by the Crown, and thirty-six members of the House of Assembly, elected by vote, four from each of the nine parishes. Of the 30,000 inhabitants (estimated, 1933) about one-half are white, mostly of English stock and tracing their ancestry to the earliest settlers.

Bermuda's mild winter climate, scenic charm, and restful environment, are enjoyed annually by an increasing number of visitors who spend the season in the Colony. Furnished and unfurnished cottages may be rented for the winter or summer season, in various parts of the Islands, and the cost of living is reasonable. Excellent private schools are available for children of all ages.

Visitors should bring to Bermuda an outfit similar to that used during a summer sojourn at a northern resort. In summer, a light overcoat or raincoat for use on shipboard is necessary, while in winter heavy clothing usually will be needed when leaving and returning to



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Known at one time as a summer playground only, Atlantic City has for years been recognized as an all-year-'round health and pleasure resort.

The great seashore metropolis in the summer and the winter differs only so far as sports are concerned. Swimming, beach games, sun bathing, fishing and sailing are the most popular in the summer months while with the change of seasons thoughts turn to golf, bicycling, horseback riding and hunting.

Of course there are also the salt water swimming pools in the hotels, ice hockey on the rink in the municipal convention hall with games between the Atlantic City Sea Gulls and leading amateur teams from this country and Canada, basketball with the Sand Snipers playing host to the nation's best professional clubs and the annual squash tournaments attracting the cream of the racquet wielders.

All of these have proven popular with the visitors and each season sees increased numbers attending the various sports attractions on the winter schedule. Atlantic City's mild climate the year 'round makes the winter vacation more enjoyable and the resort is famous for its boast of "no snow on the Boardwalk."

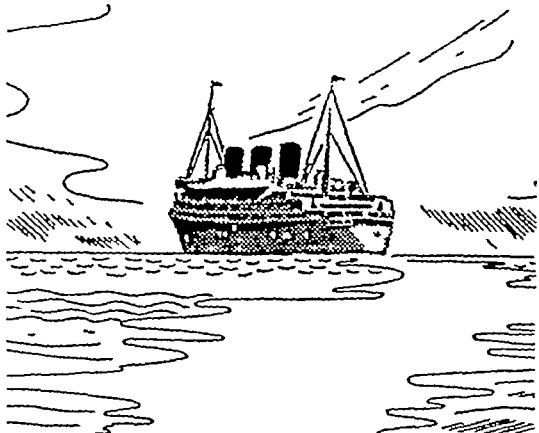
With the varied demands from the millions of visitors, the city has reached the point where practically any and every type of activity desired can be obtained. Boardwalk rolling chairs, benches along the ocean rail, comfortable sun decks on the piers and hotels, and the canvas backed beach chairs are here for those seeking rest and relaxation.

Huge airplanes are waiting at the Municipal Airport and at the Inlet hangars to take up passengers for either a short sight-seeing trip or a hurried jump to some distant city. The modern facilities at the airport, the first municipal one to be opened in the United States, have proven attractive to aviation enthusiasts and each season finds an increased number of vacationists arriving here by air.

Five splendid golf courses are within easy reaching distances. The Northfield and Linwood Country Clubs, and the Brigantine, Ocean City and Seaview Golf clubs, being just a few minutes' automobile ride from the heart of the resort. The Boardwalk bicycle lane, open from 6 a. m. to 9 a. m. daily, has proven popular and the stands where cycles may be rented are frequently hard pressed to meet the demand.

The wide, level, eight-mile long stretch of beach has become a popular bridle path for the equestrians. Here horseback riding may be enjoyed from October 1 to June 1. Saddle horses, as well as ponies for the children, may be obtained at several stands along the beach.

Pleasure-planned WINTER CRUISES



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Announcing Florida Winter Service

America's famous winter train "The Florida
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brate its 50th year of service with its inaugura-
tion on Saturday, January 2nd, leaving New
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many as 6 and 7 sections in seasons past, has
made a remarkable record for fast safe travel
and is expected to break all its existing records
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Public acceptance of the Recreation Car,
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The Coast Line's well-known Miamian and
Gulf Coast Limited will begin their Florida
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with new improved schedules

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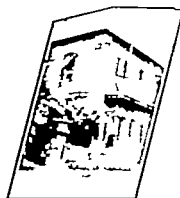


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of a large hotel, and the casual simplicity, personal attention, and
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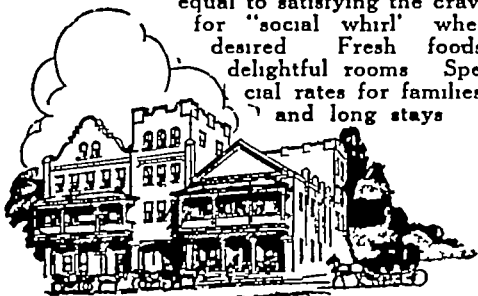
Located near principal points of interest, providing ready facilities
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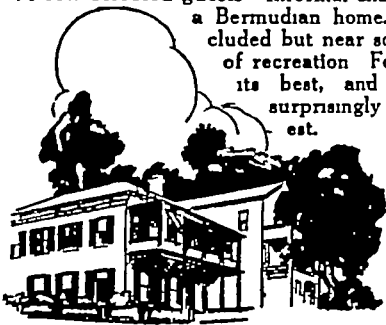
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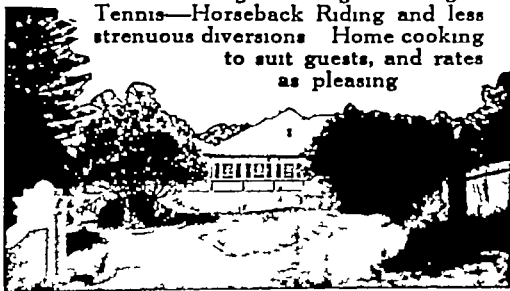
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by Babe Ruth or any other ball player would not carry from one end to the other

A striking feature of the place is its versatility for ice hockey and skating, a sheet of ice, 100 by 200 feet is frozen on the floor. The ice can be disposed of in a few hours' time and the only full sized indoor football field in the world laid in its place. Or the 140,000 square feet of floor space may be set up with hundreds of exhibit booths, each independently equipped for gas, water, sewerage, electricity, steam and compressed air. Also at the end of the vast auditorium is one of the largest and best equipped stages capable of seating 5,000 persons

The adaptability of the building and its facilities is better understood when it is considered that practically every type of convention and exposition has been staged here, as well as track meets, prize fights, dog racing, ice hockey, horse shows, horse racing, polo, football, and varied other events too numerous to mention.

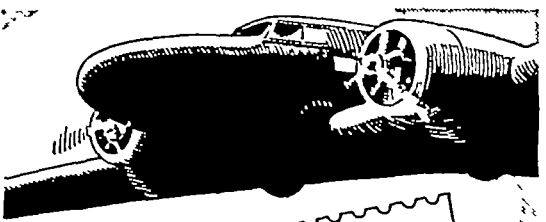
And no visit to the hall would be complete without stopping a few minutes to listen to the famous organ, by far the largest and most powerful ever built. It is equipped with two giant consoles, one with seven manuals and the other a movable one, with five. There are 1255 speaking stops and 33,000 pipes ranging from 3/16ths of an inch to 64 feet in length. It is run by a 365 h p group of motors, has seven blowers and its own generator. The wiring used would girdle the earth twice. Four years' time was necessary to complete this organ at a cost of \$500,000.

The convention hall also houses municipal radio station WPG, known the world over as the "Voice of Atlantic City" and visitors are welcome to inspect its many facilities at any time

Britain to War on Winter Fog

"If every soldier in the Rebel armies now attacking Madrid—about 100,000 strong—should fire 12-1/2 rounds of ammunition, one would have approximately the noise of the 1,250,000 detonators to be used this season by one railroad alone, the London, Midland and Scottish, in Britain's war on winter. But the British bombardment is for the preservation of lives and property and against the railroad man's deadliest enemy—fog," declares T R Dester of the Associated British Railways

"Like the ammunition of an advancing army, large stocks of detonators have been accumulated at strategic points along the line, while special "shock troops," seasoned employees recruited from the permanent way department, stand ready at all times to rush to



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Large cheerful rooms,
transient or residential,
excellent food, room
service without charge,
open roof deck, enclosed
solarium, library, chil-
dren's playroom, private
park privileges

Duck and quail hunting are very good in this vicinity and with the close of the fishing season in mid-fall many of the fishermen turn to the guns to provide the season in sport.

The great amusement piers, that in some cases extend almost a half-mile out over the ocean, will never be forgotten by anyone who has ever visited Atlantic City. Perhaps one of the most famous of its kind is the Steel Pier where the greatest variety of attractions ever assembled under one roof can be witnessed for a nominal admission in the summer months. It is impossible to take in all the pier's features in one visit, even if an entire day is spent on the structure. Winter finds a number of the attractions continued. Fishing, deep sea aquariums, and net hauls continue well into the winter at Young's Million Dollar Pier. National exhibits on Steel, Million Dollar, Garden, Central and Heinz Piers remain open throughout the winter.

Four Boardwalk motion picture palaces provide the visitor with early showings of current films. Restaurants, hotel grilles, supper clubs and cafes all feature well known dance orchestras and entertainers at remarkable reasonable prices.

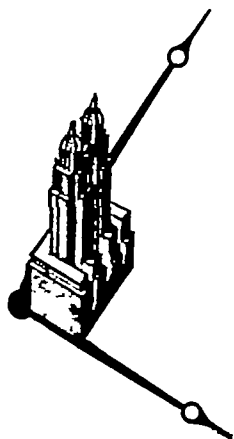
The Boardwalk hotels, long famous as some of the finest in the world, now provide rates, lower than in years and well within the means of everyone. These skyscrapers along the beachfront are ready to cater to every wish of their thousands of guests. The Boardwalk also offers miles of smart shops, where high class merchandise from all corners of the globe is on display.

At the lower end of Absecon Island, on which Atlantic City is situated, are the exclusive residential suburbs of Ventnor, Margate and Longport, where fine homes of every description can be seen. These suburbs, along with the Chelsea section of Atlantic City, are popular with those visitors, who rent cottages for their visits or once here decide to make this their home.

Any visitor to Atlantic City will not leave here without first spending a few hours inspecting the huge municipal convention hall, by far the largest in the World. Built on the Boardwalk, between Georgia and Mississippi avenues, at the cost of \$15,000,000, the structure covers seven acres of ground and seats 40,000 persons in the main hall, while the entire population of Atlantic City—66,000—can be seated in the building with room to spare.

New York City's famous Madison Square Garden could be placed in one corner of the main hall and a track meet and several large gatherings be staged concurrently in the remaining area. The longest home run ever hit

TODAY'S CENTER



Stop at the heart of important social and business New York. The Waldorf-Astoria. Just a few steps from Fifth Avenue shops, art galleries, clubs, Grand Central and the leading theatres fifteen minutes from Wall Street.

THE WALDORF-ASTORIA

PARK AVENUE 49TH TO 50TH NEW YORK

Van Hoevenberg, famous as the site of the Olympic bobsled run

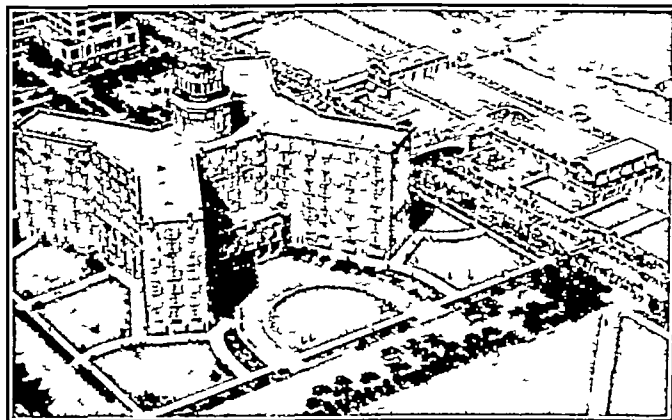
Early this month the State Conservation Department began work on the Marcy run. The local CCC camp will supply labor for the project. Following generally the old foot trail, the new development will take the ski-runners down a total descent of 3,189 feet, a distance of six and one-half miles to Adirondack Lodge, passing such well-known landmarks as Plateau camp, Indian Falls, and Marcy dam. Only 94 trees will be cut to make the trail suitable for skiing, Conservation Department officials say.

Every skier, from novice to expert, will here find something to his liking with the added attraction of the gorgeous view from the summit of Mt. Marcy, called by the Indians "Tahawus, the Cloud Cleaver." The first 544 feet of the run are above the timber line.

Winter's snows linger long on the mighty slopes of Marcy, so that devotees of the long boards can enjoy what to them is the greatest sport in the world well into the spring, even when flowers have started to peep through the moss in the lower valleys.

Recently work was started on the new Mt. Van Hoevenberg downhill run, which winds along the northeastern slope of the mountain following closely in its turns the Olympic bob-run adjoining it on the west. It is nearly a

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Manager

The Belvedere

CHARLES STREET AT CHASE
BALTIMORE

the danger points, at the first appearance of fog, snow or ice.

"Another striking military parallel, the snow plough, which may be compared with the tank, is relied upon in Britain's war against winter's forces. During spells of severe weather, regular snow plough patrols are maintained by the London, Midland and Scottish Railway over such exposed and mountainous sections of the line as those between Hellfield and Carlisle, and between Perth and Inverness, the latter run including the snow-infested County March, and the Drumochter and Slochd Summits which are respectively 1,484 and 1,315 feet high. Tons of anti-freezing salt are used on all heavy weather runs.

"Thus, the railways mobilize men, explosives and machinery—the destructive forces of war—for the protection of human lives and property."

Winter at Lake Placid

Soon they'll be skiing down from the clouds at this resort.

Two new downhill ski runs are now in process of construction—one from the peak of Mt. Marcy, the highest mountain in New York state, 5,344 feet above the level of the sea, down to Adirondack Lodge, and the other on Mt.

Sea air is good for convalescents



Doctors say that sea air, rest and good food build back health. Tiresome journeys are avoided by recommending the Half Moon, New York City's only ocean front hotel, a short half hour from Borough Hall, Brooklyn. Luxurious, modern accommodations at moderate rates are supplemented by these important features:

SPACIOUS SUN DECKS ON OCEAN
SALT WATER BATHS
SPECIAL ATTENTION TO DIET
FREE GARAGE FOR GUESTS
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American Plan rates from \$5.00 per person

NEW RESIDENTIAL PLAN. Special low monthly rates from \$32.50 per person (two in room) with salt water bath. Write for further details.

HALF MOON HOTEL Near Sea Gate, Brooklyn, N. Y. C.

David J. Martin, Managing Director

Phone Mayflower 9-3800

excellent downhill runs at Lake Placid and will make up a part of the 250 miles of ski trails which radiate from this resort in all directions

Royal Winter Fair to Draw Late Fall Motor Tourists

Highlighting the social and amusement calendar of Dominion activities, particularly in the capital of Ontario, next month, will be the annual Royal Winter Fair and Horse Show, November 18 to 26, inclusive

The particularly mild climate of Toronto along the lake front makes it a magnet for motor tourists during the latter half of November, thousands of whom are taking their regular, or an extra vacation during the mild, yet crisply-clear Autumnal season. The Royal Horse Show, this year, immediately follows the National in New York City and is always the first event of its kind during the fall and winter in Canada.

Situated equi-distant from New York and Chicago, and being the second largest city in Canada and the largest in the province, Toronto is fortunately located for the fair and show, which ranks second only to the Canadian national exposition. The affair is both national

and international—national as representing Canada from ocean to ocean, and international in its inclusion of leading American stables with exhibitors and horses from six different countries.

Motor car owners comprise virtually the entire group, thousands nightly, to witness the horse show. There is a tang of unusual freshness about it—its smart assemblage of Canadian society, headed by his Majesty's representative, its sprinkling of old-world leaders, its hearty, American friendliness, its strikingly fine entries, the military smartness of its ring work, and its high class panel of judges for the occasion.

The locale of the Royal Winter Fair and Horse Show is within a few minutes motor drive of the Royal York Hotel, largest hostelry in the British Empire, and of the railroad stations. Garage accommodations and parking spaces are available within the immediate vicinity of the Royal York. Around the Horse Show proper, adding to its inherent sparkle and brilliance, is to be found a vast assemblage of animals and birds in "Ten Big Shows in One," as it is billed.

Visitors motoring to Toronto will have ample opportunity to see Niagara Falls from both the Canadian and American side, in a setting of evergreens and red and gold fall leaves,

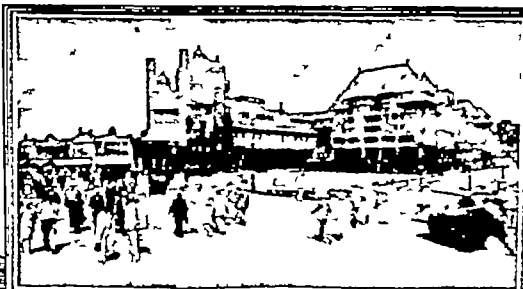
Marlborough-Blenheim

ATLANTIC CITY, N.J.

REST . . . CHANGE . . . CONVALESCENCE

Ideal oceanfront location—no steps to climb—open to the fresh sea air and maximum sunshine . . . spacious decks (afternoon tea and bouillon served) . . . two heated ocean solaria . . . library and game room . . . sea water in all baths . . . wholesome, tasty cuisine.

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OPEN ALL YEAR

WRITE TODAY FOR
ALL DETAILS

The **Grossinger** *Hotel &*
Country Club
FERNDAL, NEW YORK

mile from the start of the run at the top of the mountain to the finish at the bob clubhouse

The course will be approximately 15 feet wide on the straightaways, widening out to 70 feet maximum on some of the great curves. Classed as an intermediate or expert run, the new trail will contain several 20 per cent grades, plenty of thrilling action for the most experienced skier.

Here it will be all "slide," as Conservation Department trucks will take the skiers to the top of the mountain at a nominal charge.

One-third of the run is on state land and two-thirds on property donated to the North Elba park district by the Lake Placid club. Cost of construction will be about \$1,000. The new run will be ready for use late in November.

For racing, a Lobner electric timing device will be installed, which will record times of contestants in hundredths of a second.

Experts say that the new development on Mt. Van Hoevenberg will be one of the finest downhill ski runs in the northeastern United States. It will take its place with the five other

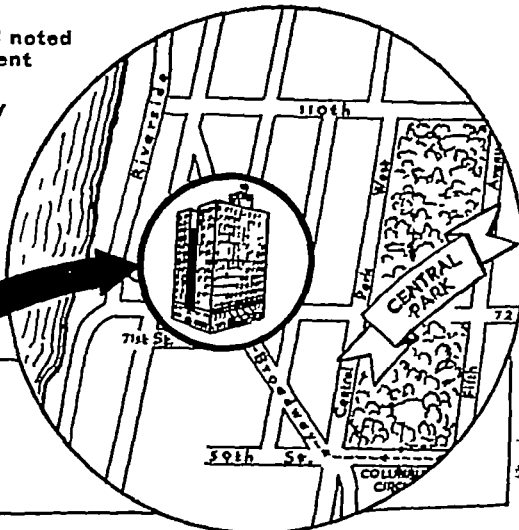
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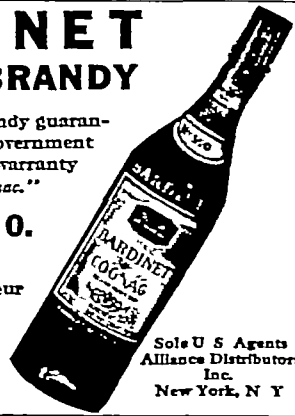
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THE ST GEORGE Hotel in Bermuda recently counted among its guests Dr H H C Sharpe of Downingtown, Pa., and Dr M A Novey of Baltimore, Md

REGISTERED at the Senator, Atlantic City, N J, were Dr and Mrs Phillips of Brooklyn, N Y, Dr A S Allbach of North Wales, Pa, and Dr and Mrs G Knadler of Philadelphia.

THE SEASIDE HOTEL at Atlantic City had among their guests Dr and Mrs Raymond

Smiley of Bloomfield, New Jersey, Dr and Mrs T F Plunkett of Derby, N J, Dr and Mrs G F Ventresca of Pittsburgh, Pa, Dr Austin K De Blois and daughter of Philadelphia, Dr and Mrs D W Lewis of Middleton, Delaware, Dr and Mrs J W Fredette of Pittsburgh, and Dr and Mrs Charles E Brown and Miss Ruth Brown of Hazelton, Pa.

RECENT GUESTS at Hotel Lexington, New York, included Dr R D Grimmer of Hempstead, L I, Dr Kenneth Davenport of Rochester, N Y, Dr Matthew Shapiro of New York, Dr John D Currence of New York, Dr James S Lyons of Albany, N Y, Dr Thomas Tyrell of Albany, N Y, Dr J L Golly of Rome, N Y, Dr S J Cattley of Ogdensburg, N J, Dr M J Stearns of Ogdensburg, N Y, Dr A Stewart Ferguson of Marlboro, N Y, Dr Eugene Blake of New Haven, Ct., Dr W P Hall, Utica N Y, Dr Bernard Friedman of Buffalo, N Y, Dr John C Youme of Schenectady, N Y, Dr J Leonard Byrnes of Hudson Falls, N Y, and Dr Bernard Glueck of Ossining, N Y

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WHAT'S THIS? Our old friend Santa in trouble?

Not exactly. He's just as bouncy and jolly as ever. His smile would light up a coal mine. But he is getting just a wee bit worried about his waistline. And well he might.

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You've often heard people say, "I must go on a diet" or "I must go in for some strenuous exercise and work this fat off." But either course may be dangerous. Unwise dieting frequently substitutes, for the evil of obesity, the evil of undernourishment. Strenuous exercise obviously adds to the burden on an already overburdened heart.

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Diet is a form of treatment, and it

should *never* be prescribed by anyone but a physician. The doctor's knowledge is necessary in determining what foods, and how much, may be eaten—what diet will be safe and pleasant, yet effective, in removing unneeded, unsightly fat.

If you are overweight, or in doubt about what weight you should maintain, do something about it. But don't let well-meaning friends, or the fellow you met while on vacation, prescribe for you. See your doctor.

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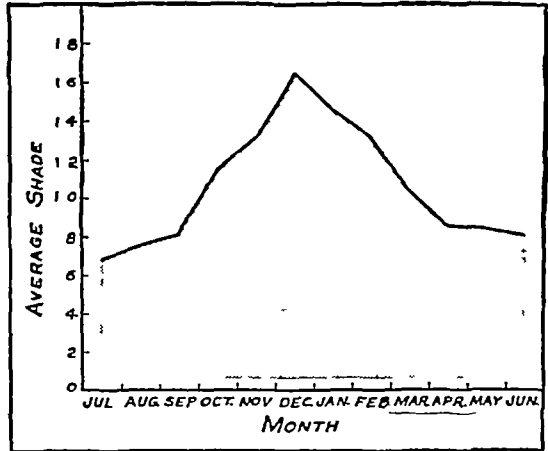
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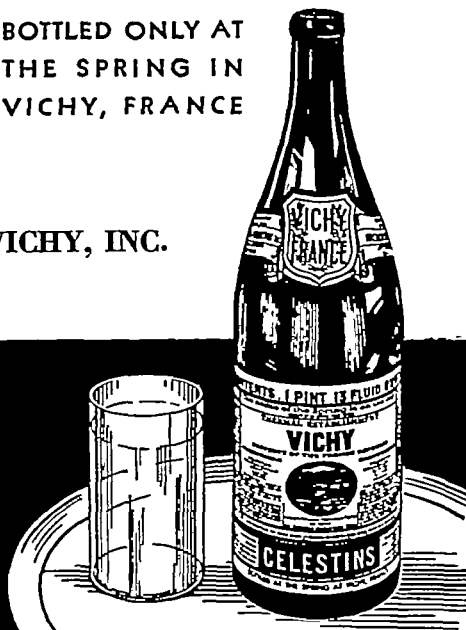
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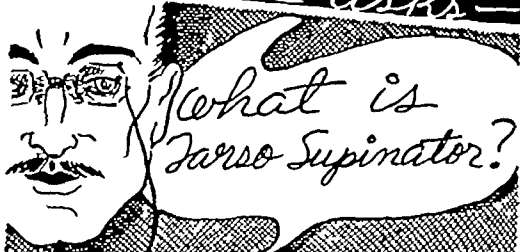
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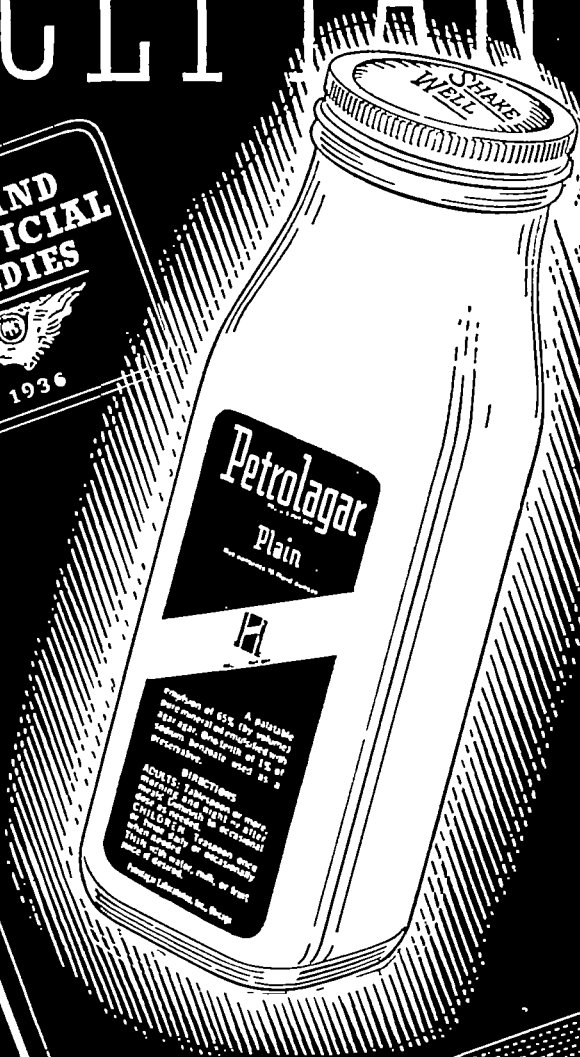
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The reference standard is the concentrate produced from rice polishings, by a specified adsorption method, in the Medical Laboratory of Batavia (Java). The International Unit for vitamin B₁ is the vitamin B₁ activity of 10 mg. of this standard adsorption product.

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The standard of reference for vitamin C is a specified sample of pure levo-cevitic acid (levo ascorbic acid). The International Unit for vitamin C is the vitamin C activity of 0.05 mg. of this standard.

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The reference standard for vitamin D is a solution of irradiated ergosterol, prepared under specified conditions at the National Institute for Medical Research (London). The International Unit for vitamin D is the vitamin D activity of 10 mg. of this standard solution.

These International Units for expressing vitamin contents have been specified in the most recent Pharmacopoeia of the United States (2) as well as by the Council on Pharmacy and Chemistry (3) and the Council on Foods of the American Medical Association (3), and provision has been made for distribution of the standards in this country (4).

These units have been used to express vitamin potencies in recent studies on canned foods, the results of which further emphasize the fact that these foods rank among the most important sources of the vitamins essential in human nutrition (5), (6), (7).

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(4) 1935 J. Assoc. Official Agr. Chem. 18, 610

(5) 1935 J. Home Econ. 27 658
(6) 1936 Food Research 1 223
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**CLINICAL EVALUATION OF A NEW TRICHOPHYTON
EXTRACT****Preliminary Report**JOSEPH JORDAN ELLER, M D and KENNETH A KAZANJIAN, M D, *New York City*

Despite the multiplicity of agents used in the treatment of dermatophytosis, local therapy has not proven satisfactory. A fungicide strong enough to destroy the organisms often defeats its purpose by producing an inflammatory reaction. As a result of the infection, the tissues may become so sensitized that the application of the weakest antiseptic ointment cannot be tolerated. Such an additional irritation may cause an exacerbation of the infection, as well as a general allergic state, manifesting itself in the appearance of dermatophytids. Furthermore, patients who once suffered from a ringworm fungus infection seem to become quite susceptible to reinfection. Inasmuch as the spores can live in hose, shoes, and on floors, there is always this problem with which to contend.

It is for these reasons that dermatologists have endeavored to attack the problem of dermatophytosis from a different angle. Their efforts turned quite naturally into a search for a biologic agent, such as a vaccine, which would not only prove effective in combating a local infection, but would also desensitize or immunize the patient. For a number of years a polyvalent trichophyton has been used with results that have been reported as more or less unsatisfactory.

Van Dyck, Kingsbury, Throne, and Myers¹ report encouraging results from the use of trichophyton vaccines. In 100 cases of fungus infections, most of them of the extremities, thirty-two per cent were cured, twenty-eight per cent improved, twenty-one per cent slightly improved, and nineteen per cent unim-

proved. Boric acid ointment was used locally. The cured cases, according to the tables in the report, showed an average period of treatment of about seven weeks.

Sulzberger and Wise² came to the conclusion that desensitization was possible, but advised the limitation of its use to obstinate and persistent cases in which the "phytids" was the most difficult phase of the clinical picture. They did not expect to cure the primary foci of infection in the feet by this method.

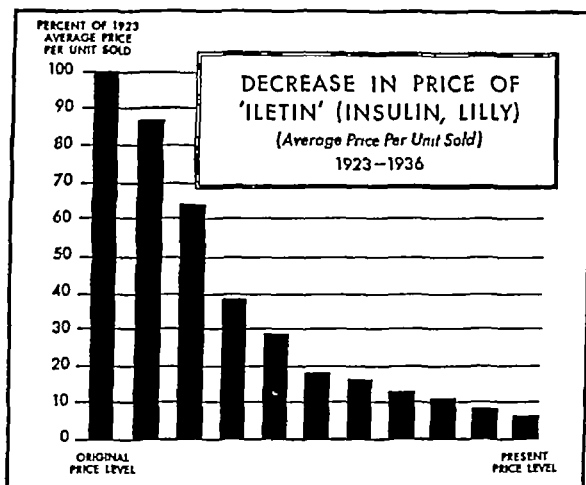
Traub and Tolmach³ recently reported their results in 135 cases of dermatophytosis treated with trichophyton administered *intradermally*. They state "we fail to see any rational basis for considering that intradermal injections of trichophyton are particularly useful in the treatment of this disease." Some of their patients were made definitely worse by the injections. They felt that desensitization, as manifested by failure to react to 1:1 dilutions of trichophyton, had little or no effect on the course of the disease. "There was certainly no evidence to encourage us in the hope that immunity can be induced by means of intradermal injections of trichophyton." Traub and Tolmach used two different preparations of trichophyton, but noted no difference in the results obtained. We might mention here that Fonseca's method of administering the vaccine is by *subcutaneous* injection, and no attempt at "desensitization" is made.

The work of Fonseca and his associates was first made known to us in August 1935, when we visited their

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greatly because it seemed based on well-recognized immunological and bacteriological grounds. Fonseca described his vaccine as having antigenic properties which aroused antibody production and of achieving general immunity to involvement of the skin by a large variety of the fungi.

We attempted to make a preliminary survey. During the past eight months, fifty patients from private practice, suffering from fungus infections were given injections of the vaccine, in addition to the regular treatments by the usual local therapeutic methods (Table I). An earlier group of fifty other patients who had received similar local treatment but no vaccine, was studied for comparative results. Our object was to estimate, if possible, whether the use of "dermato-

mycol" shortened the time of treatment or resulted in more cures. The diagnosis in each case, aside from our clinical impression, was confirmed either by recovery of the fungi from the lesions, by culture, or by a positive intracutaneous test with "dermotricofitin" or with trichophyton (Lederle). In a certain number of cases there was a coexistence of other factors, such as a possible occupational dermatitis. Many of the patients had previously been treated by other physicians, indicating that some were of the types recalcitrant to therapy.

The usual routine of local treatment was carried out in all patients, i.e. wet dressings, mild fungicides, and in some cases fractional doses of Grenz or roentgen rays. A total of 504 subcutaneous injections of dermatomycol was given at

TABLE I

Name	Sex	Age	Site	Appearance	Other Diseases	Duration before Trich	Inf of Trich	Speed of improvement	Final result
J.H.	M	23	Hands feet and nails	Vesicular patches	Occupational dermat?	1 1/2 mo	8	7 weeks	Cure
K.S.	P	41	Hands and feet.	Scattered vesicles	None	15 mos	12	5 mos.	Cure
F.M.	M	46	Hands and feet.	Vesicular patches	Occupational dermat?	1 1/2 mos.	10	9 mos.	Cure
M.F.	M	22	Feet	Lichen. patches	None	3 years	7	7 weeks	Imp
P.T.	M	38	Hands and feet.	Scattered vesicles	Occupational dermat.	2 mos	8	7 weeks	Cure
A.G.	M	21	Hands	Lichen patches	Nickel dermat?	5 mos	12	10 weeks	Cure
P.W.	M	42	Hands	Fissuring and Lichen	Occupational dermat	12 mo	10	8 weeks	Imp
J.B.	M	33	Feet	Vesicles	None	8 years	15	15 weeks	Imp
J.K.	M	36	Feet	Lichen patches	None	8 years	11	11 weeks	Imp
R.W.	M	24	Hands	Vesicles	None	6 mos.	10	8 weeks	Cure
W.O.C.	M	32	Hands and feet	Scattered vesicles	None	6 years	21	4 weeks	Imp
E.P.	F	26	Hands and feet	Squamous	None	2 mos	5	5 weeks	Imp
M.S.	M	34	Crural	Follicular	None	2 1/2 mos	2	2 weeks	Imp
J.G.	F	40	Feet	Vesicles	Pollic Dec	2 years	14	14 weeks	Imp
P.G.	P	20	Hand	Vesicles	None	3 mos.	15	14 weeks	Imp
P.S.	P	29	Hand	Vesicles	None	5 years	4	4 weeks	Imp.
R.	P	60	Hands and feet.	Vesicular	None	3 years	9	9 weeks	Imp
P.	P	27	Hands and feet	Vesicular	None	6 mos	4	4 weeks	Imp
M.	M	38	Hands	Vesicular	None	1 mo	2	2 weeks	Imp
P.	M	45	Feet and groins	Vesicular	None	7 mos.	1	1 week	Imp
H.	M	31	Groins	Vesicular	None	3 mos.	6	6 weeks	Imp
G.	F	32	Hand	Squamous	Occupational?	5 years	15	15 weeks	Imp
C.	M	55	Hand	Squamous	Occupational	3 mos.	4	4 weeks	Imp
B.	M	31	Hand	Squamous	Occupational	3 mos.	3	3 weeks	Imp
H.	M	30	Hands and feet.	Vesicular	None	3 mos.	3	3 weeks	Imp
P.D.	M	28	Hand	Squamous	Occupational?	5 mos.	16	14 weeks	Imp
P.B.	M	48	Hand and face	Squamous	Occupational?	2 mos.	23	23 weeks	Cure
J.B.	F	30	Hands	Squamous	Occupational?	2 mos.	9	6 weeks	Imp
H.	M	62	Hands	Squamous	Pneumonia	12 mos.	5	5 weeks	Imp
F.S.	M	26	Feet	Scaling	None	3 years	10	10 weeks	Imp
L.S.	M	14	Hands and feet.	Scaling	None	2 years	5	5 weeks	Imp
E.B.	M	30	Feet	Scaling	None	3 years	6	6 weeks	Imp
B.A.	M	28	Feet	Vesicular	None	13 years	14	2 weeks	Imp
P.R.	F	30	Feet	Squamous	None	1 year	10	10 weeks	Imp
F.J.	M	30	Hands	Squamous	Occupational	6 mos.	12	12 weeks	Imp
M.A.	F	33	Hand	Vesicular	None	6 mos	5	5 weeks	Imp
L.H.	F	34	Hands	Squamous	None	8 mos.	23	3 weeks	Imp
B.S.	P	18	Feet	Vesicular	None	3 weeks	2	2 weeks	Imp
J.C.	F	60	Feet	Fissuring	None	6 mos.	20	20 weeks	Imp
M.D.	M	24	Hands	Squamous	Occupational?	3 weeks	23	23 weeks	Cure
S.F.	M	58	Groins and feet	Squamous	None	3 years	6	6 weeks	Imp
C.W.	M	25	Hands and arms.	Nurmulcular	None	6 mos.	7	7 weeks	Imp
S.E.	M	40	Hands	Vesicular	Occupational?	7 weeks	8	8 weeks	Imp
J.H.	M	28	Feet and buttocks	Papules and vesicular	None	7 years	8	18 weeks	Imp
W.	M	30	Groin and anus	Papules and vesicular	None	2 years	4	4 weeks	Imp
F.C.	M	21	Feet	Fissures	None	3 mos.	17	17 weeks	Imp
W.H.	M	49	Hands and feet.	Vesicular	None	16 years	3	3 weeks	Imp
J.S.	M	24	Hands	Scaling	Occupational?	1 mo	5	5 weeks	Imp
W.O.C.	M	32	Hands and feet	Vesicular etc	None	6 years	25	25 weeks	Imp
G.J.	F	38	Hands	Squamous	Occupational?	1 year	3	3 weeks	Imp

clinic at Rio de Janeiro, Brazil For several years they have used a vaccine for treating fungus infections They do not attempt to desensitize patients, because this procedure has proven either useless or harmful in their experience For purposes of diagnosis, "dermotricofitin,"—a filtrate of 300 strains of trichophyton, microsporum, achorion, endodermophyton, and epidermophyton—is used This filtrate is injected intradermally in the forearm and, when positive, the familiar tuberculin-like reaction appears within twelve to forty-eight hours as an erythematous macule, papule, or indurated area—varying in intensity from case to case or in the same case, according to the stage and severity of the fungus infection It is believed that fewer false negatives in fungus infections result, because of the large number of strains employed in the production of the filtrate

The preparation of this polyvalent trichophyton extract for treatment (dermatomycol, Brazilian) is of interest⁴ Three hundred strains of achorion, microsporum, trichophyton, epidermophyton, and endodermophyton obtained in the United States, Japan, Europe, and in North, South, and Central America have been employed The usual individual fungus is grown in aerobiosis in Sabouraud's glucose agar for one month The surface culture of mycelial growth is then killed by sulphuric acid and this mixture neutralized by sodium bicarbonate Each lot is of known constituency and the strength is determined by the total original mycelial weight content Phenol 0.4 per cent in concentration is used to maintain sterility of the vaccine Tests for potency are made on experimentally infected guinea pigs

The first paper on the use of this polyvalent vaccine appeared in 1931 Fonseca and Leao⁵ reviewed the work of numerous investigators who at various times used autogenous or stock vaccines in the treatment of fungus infections Results in general were disappointing, but further studies seemed worth while A vaccine was prepared by the method described above from 200 strains of organisms The therapeutic use of the vaccine and the results attained in two hundred cases was described In only thirty out of this group could a definite

conclusion be drawn, since it was impossible to follow the progress of most of their patients Cases were cited which showed excellent results, considering that many of them were scalp infections in children Unusual reactions were rare appearing as dyshydrosiform eruptions of the extremities

Motta,⁶ using Fonseca's preparation found it quite valuable and stated that ten to thirty injections were necessary for systematic cure of patients Some of the patients were also greatly improved by applying the vaccine solution locally

Fonseca⁷ stated again in 1934 that the use of his vaccine had enabled the original authors to abandon roentgenotherapy of the scalp in favus They also had been able to dispense with any local treatment in epidermophytosis and onychomycosis, since the infections responded to a greater or lesser number of injections of the polyvalent mycotic vaccine Their experience at that date is based on the use of the vaccine in hundreds of patients suffering from epidermophytosis, trichophytosis of the scalp and beard, microsporia, onychomycosis, and favus infections Reactions were reported as occurring in one to two per cent of cases as generalized erythema, pyrexia, or dyshydrosic reactions of the palmar and plantar surfaces of the hands and feet.

The nature of the antigenic properties of Fonseca's vaccine is now being studied and a recent report⁸ is available in the literature The method used in preparing the vaccine excludes the possibility of a protein being still present in it The classic reagents for detecting the presence of proteins have been found to be negative Tests for carbo-proteins have been found to be positive, and the vaccine is found to deviate polarized light from twenty to twenty-seven degrees, the vaccine thus demonstrating about the same deviating qualities as a one-half per cent glucose solution Preliminary clinical trials have shown that the carbohydrate fraction of the vaccine contains the therapeutic properties It is interesting to note that the active portion of the usual forms of trichophyton used in desensitization methods is considered to be contained in the polysaccharides⁹

The work of Fonseca and his associates with this new vaccine interested us

greatly because it seemed based on well-recognized immunological and bacteriological grounds. Fonseca described his vaccine as having antigenic properties which aroused antibody production and of achieving general immunity to involvement of the skin by a large variety of the fungi.

We attempted to make a preliminary survey. During the past eight months, fifty patients from private practice, suffering from fungus infections were given injections of the vaccine, in addition to the regular treatments by the usual local therapeutic methods (Table I). An earlier group of fifty other patients who had received similar local treatment but no vaccine, was studied for comparative results. Our object was to estimate, if possible, whether the use of "dermato-

mycol" shortened the time of treatment or resulted in more cures. The diagnosis in each case, aside from our clinical impression, was confirmed either by recovery of the fungi from the lesions, by culture, or by a positive intracutaneous test with "dermotricofitin" or with trichophyton (Lederle). In a certain number of cases there was a coexistence of other factors, such as a possible occupational dermatitis. Many of the patients had previously been treated by other physicians, indicating that some were of the types recalcitrant to therapy.

The usual routine of local treatment was carried out in all patients, i.e. wet dressings, mild fungicides, and in some cases fractional doses of Grenz or roentgen rays. A total of 504 subcutaneous injections of dermatomycol was given at

TABLE I

Name	Sex	Age	Site	Appearance	Other Diseases	Duration before Trich	Inj of Trich	Speed of improvement	Final result
J.H.	M	23	Hands feet and nails	Vesicular patches	Occupational dermat?	1 1/2 mo	8	7 weeks	Cure
K.S.	P	41	Hands and feet	Scattered vesicles	None	15 mos.	12	5 mos.	Cure
F.M.	M	46	Hands and feet	Vesicular patches	Occupational dermat?	1 1/2 mos.	10	9 mos.	Cure
M.P.	M	22	Feet	Lichen patches	None	3 years	7	7 weeks	Imp
F.T.	M	38	Hands and feet.	Scattered vesicles	Occupational dermat	2 mos.	8	7 weeks	Cure
A.G.	M	21	Hands	Lichen patches	Nickel dermat?	5 mos.	12	10 weeks	Cure
F.W.	M	42	Hands	Fissuring and Lichen	Occupational dermat	12 mo	10	8 weeks	Imp
J.B.	M	33	Feet	Vesicles	None	8 years	15	15 weeks	Imp
J.K.	M	36	Feet	Lichen patches	None	8 years	11	11 weeks	Imp
R.W.	M	24	Hands	Vesicles	None	6 mos.	10	8 weeks	Cure
W.O.C.	M	32	Hands and feet	Scattered vesicles	None	6 years	21	4 weeks	Imp
E.P.	F	26	Hands and feet.	Squamous	None	2 mos.	5	5 weeks	Imp
M.S.	M	34	Crural	Follicular	None	2 1/2 mos.	2	2 weeks	Imp
J.G.	F	40	Feet	Vesicles	Follic Dec	3 mos.	14	14 weeks	Imp.
F.S.	F	20	Hand	Vesicles	None	3 mos.	15	14 weeks	Imp.
R.	F	29	Hand	Vesicles	None	5 years	4	4 weeks	Imp.
P.	F	60	Hands and feet.	Vesicular	None	3 years	9	9 weeks	Imp
M.	M	27	Hands and feet	Vesicular	None	6 mos.	4	4 weeks	Imp
P.	M	38	Hands	Vesicular	None	1 mo	2	2 weeks	Imp
H.	M	45	Feet and groins	Vesicular	None	7 mos.	1	1 week	Imp
G.	F	31	Groins	Vesicular	None	3 mos	6	6 weeks	Imp
C.	M	32	Hand	Squamous	Occupational?	5 years	15	15 weeks	Imp
B.	M	55	Hand	Squamous	Occupational	3 mos.	4	4 weeks	Imp
H.	M	31	Hand	Squamous	Occupational	3 mos.	4	4 weeks	Imp
P.D.	M	30	Hands and feet.	Vesicular	None	3 mos.	3	3 weeks	Imp
P.B.	M	28	Hand	Squamous	Occupational?	5 mos.	16	14 weeks	Imp
J.B.	M	48	Hand and face	Squamous	Occupational?	2 mos.	23	23 weeks	Cure
H.	F	30	Hands	Squamous	Occupational?	2 mos	9	6 weeks	Imp
F.S.	M	62	Hands	Squamous	Psoriasis	12 mos.	5	5 weeks	Imp
L.S.	M	26	Feet	Scaling	None	3 years	10	10 weeks	Imp
E.B.	M	14	Hands and feet.	Scaling	None	2 years	5	5 weeks	Imp
B.A.	M	30	Feet	Scaling	None	3 years	6	6 weeks	Imp
F.R.	F	28	Feet	Vesicular	None	13 years	14	2 weeks	Imp
F.J.	F	30	Feet	Squamous	None	1 year	10	10 weeks	Imp
M.A.	M	30	Hands	Squamous	Occupational	6 mos.	12	12 weeks	Imp
L.H.	F	33	Hand	Vesicular	None	6 mos	5	5 weeks	Imp
B.S.	F	34	Hands	Squamous	None	8 mos.	23	3 weeks	Imp
J.C.	F	18	Feet	Vesicular	None	3 weeks	2	2 weeks	Imp
M.D.	F	60	Feet	Fissuring	None	6 mos	20	20 weeks	Imp
S.P.	M	24	Hands	Squamous	Occupational?	3 weeks	23	23 weeks	Cure
C.W.	M	58	Groins and feet	Squamous	None	3 years	6	6 weeks	Imp
S.E.	M	25	Hands and arms.	Annular	None	6 mos.	7	7 weeks	Imp
J.H.	M	40	Hands	Vesicular	Occupational?	7 weeks	8	8 weeks	Imp
W.	M	28	Feet and buttocks	Papules and vesicular	None	7 years	8	18 weeks	Imp
W.	M	30	Groin and anus.	Papules and vesicular	None	2 years	4	4 weeks	Imp
P.C.	M	21	Feet	Fissures	None	3 mos.	17	17 weeks	Imp
W.H.	M	49	Hands and feet	Vesicular	None	16 years	3	3 weeks	Imp
J.S.	M	24	Hands	Scaling	Occupational?	1 mo	5	5 weeks	Imp
W.O.C.	M	32	Hands and feet.	Vesicular etc	None	6 years	25	25 weeks	Imp
G.J.	F	38	Hands	Squamous	Occupational?	1 year	3	3 weeks	Imp

five to seven day intervals Eighteen patients had between ten and twenty or more treatments The average time of treatment was eight and one-half weeks per patient

Summary and Conclusions

Eight cases were discharged as clinically cured, twenty-seven had improved to such an extent that the patients felt it unnecessary to continue treatment, although many of them still had some slight evidence of the infection Fifteen patients are still under treatment. None of our vaccine cases were made worse by the treatment. In only one patient was the vaccine discontinued for any length of time This patient complained of severe headache on the day of the injection In a few cases, the arm used for repeated injections showed an area of edema and scaling with considerable pruritis

After studying the records of the year before, in which fifty cases in private practice were treated by local measures only, the only outstanding difference that

could be ascertained was that the patients who did not have the vaccine therapy averaged almost twice the length of time under treatment, i.e., thirteen and a half weeks as against eight and a half weeks

We feel that Fonseca's method of immunizing with a polyvalent fungus vaccine is based on better theoretic grounds than desensitization attempts which have had considerable trial by several investigators Our work with fifty patients over a period of eight months seems to indicate that dermatomycol shortens somewhat the course of fungus infections, but the results were not as striking as in the earlier reports in the literature.

Climatic and racial differences between the United States and Brazil may be factors bearing on these results The prevalent strains of fungi also differ from those in Brazil, but the large number of strains utilized in the preparation of the vaccine and the element of cross immunity effects in related fungi justify the use of the vaccine in further investigations

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WELL WORTHY OF THE HALL OF FAME

How many people, of the countless thousands who benefit by artificial refrigeration, know that it was devised by a doctor? In the Hall of Fame in the national capitol at Washington each state is invited to place statues of its two most distinguished sons It is of interest to know that the State of Florida has one of its representatives, a physician, Dr. John Gorrie, the discoverer of artificial refrigeration, says *Southern Medicine and Surgery* The original machine by which artificial ice was first made about a hundred years ago is on exhibition at the Smithsonian Institute in Washington. It was for a long while an object of ridicule and he was unable to get funds for its commercial development. It

was not until thirty years after his death that one of the first artificial ice factories in the world was built in Apalachicola, his home. As a practicing physician he had to treat many cases of fever including malaria, which made him seek a way to procure ice for the control of the fever and for the comfort of his patients. It is of especial interest to know that unselfish seeking of a therapeutic aid for his patients and not the desire to make money led him to the discovery the importance of which to humanity in the economic and industrial world is just being fully appreciated. He understood the necessity for proper ventilation of the sick room and attempted air-conditioning in a crude way.

NEUROLOGICAL COMPLICATIONS OF SUBACUTE BACTERIAL ENDOCARDITIS

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In the course of subacute bacterial endocarditis, a variety of neurological complications may occur. This fact has received but little detailed consideration in the literature on the subject.

Libman¹⁻⁴ in his comprehensive studies of subacute bacterial endocarditis has frequently referred to various neurological manifestations, particularly hemorrhages of various types, cerebral embolisms, and abscesses, which he regards as areas of softening secondarily infiltrated by polymorphonuclears. He also refers to occasional cases of bacterial and non-bacterial meningitis, meningismus, and encephalitis.

This paper is based on a study of forty-one cases which we were called to see because the symptoms suggested to the attending physician a diagnosis of meningitis, encephalitis or poliomyelitis. The problem of differential diagnosis is at times fairly difficult. One must keep in mind the fact that embolic phenomena are of rather frequent occurrence in this disease. A lumbar puncture is, of course, indispensable. In this group of patients, the diagnosis of subacute bacterial endocarditis was established by the clinical picture and course, and confirmed in about a third of the cases by blood cultures. In certain cases necropsies were performed. All the blood cultures showed a non-hemolytic streptococcus, except one instance in which a gonococcus was found.

For clinical purposes we have divided the neurological complications into four groups and tables have been prepared summarizing the cases. This classification is not entirely satisfactory as certain symptoms may be present in two or more groups. Moreover, during the course of the disease the clinical picture may change. These groups simply indicate the striking features at some stage of the disease, particularly the onset.

The groups are as follows

I Cases with signs of Meningeal Irritation (Table I) These patients presented signs strongly suggestive of meningitis, and the diagnosis was made only by the examination of the spinal fluid. There were fifteen cases in this group. In nine instances a diagnosis of either serous or bacterial meningitis was made on the findings in the spinal fluid. Four of these were definitely bacterial meningitis, a non-hemolytic streptococcus being isolated from the spinal fluid. In one of these cases where organisms were not isolated, a bacterial meningitis was suspected on account of the low spinal fluid sugar. A meningitis due to a non-hemolytic streptococcus may be of very short duration.

Four cases had a serous meningitis. By the term serous meningitis, we mean that form of meningeal reaction in which there is a definite and often large increase in cells usually with a preponderance of polymorphonuclears, an increase in protein, normal sugar, and no organisms by smear or culture.

In four instances the signs of meningeal irritation were due to subarachnoid hemorrhage. Libman has pointed out that the subarachnoid hemorrhage is in most instances due to a rupture of a mycotic aneurysm and occasionally to a purpuric manifestation. It is usually impossible to find the exact point of bleeding at necropsy.

In two cases there were signs of meningeal irritation with a normal spinal fluid. This condition is designated as meningismus.

For the sake of brevity we are not describing cases illustrative of each of the four subdivisions. Indeed, the clinical picture in all is very much the same. The following case is selected as an example.

P. M., aged thirty-nine, was taken ill on November 28, 1932, with fever, headache, and insomnia. His past history revealed that he had poliomyelitis as an infant and "rheumatism" two years ago.

He was seen by one of us on December 29, at which time examination showed the patient to appear anemic and chronically ill. The temperature was 99° F., pulse ninety, and respira-

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TABLE I—CASES WITH SIGNS OF MENINGEAL IRRITATION (GROUP I)

Name	Age	Sex	Outstanding neurological symptoms	Spinal fluid findings	Remarks
J B	13½	M	Headache vomiting rigid neck, Kernig Brudzinski absent knee jerks apathy strabismus	Large increase polymorphonuclears. Protein greatly increased, Sugar absent, Culture Streptococcus viridans.	Bacterial meningitis.
V J	25	M	Headache vomiting apathy, rigid neck, Kernig	Culture Streptococcus viridans.	Bacterial meningitis.
S A	67	F	Stupor tremors	550 cells—polymorphonuclears. Protein increased. Sugar decreased, Culture Streptococcus viridans	Bacterial meningitis.
E S	44	F	Insomnia delirium rigid neck Brudzinski, paresis of legs, absent knee jerks	5 cells — mononuclears Chemistry normal Culture Streptococcus viridans.	Bacterial meningitis.
P M	39	M	Headache, insomnia rigid neck Kernig subconjunctival hemorrhage knee jerks exaggerated	Large increase polymorphonuclears. Protein increased Sugar diminished Culture Negative	Question of bacterial meningitis Blood culture non-hemolytic streptococcus.
B J	38	F	Vomiting, rigid neck, pupils fixed knee jerks diminished apathy	720 cells — 70% mononuclears Protein increased Sugar diminished	Bacterial meningitis. P M showed meningeal edema.
E P	6	F	Delirium Brudzinski	Large increase cells—90% polymorphonuclears. Sugar normal Culture Negative	Serous meningitis
R Y	17	F	Headache, rigid neck Kernig Babinski	2250 cells — polymorphonuclears. Protein increased. Sugar normal Culture Negative.	P M blood culture Gonococcus
R I	24	F	Headache, rigid neck left hemiplegia left ankle clonus, Babinski stupor	1650 cells—polymorphonuclears. Protein increased Sugar normal Culture Negative.	Serous meningitis, Blood culture Streptococcus viridans P M multiple infarcts. Subsiding meningitis.
S M	56	M	Headache vomiting apathy rigid neck, Kernig, strabismus nystagmus right Babinski knee jerks absent	Hemorrhagic	Subarachnoid hemorrhage.
M A.	24	F	Headache, vomiting irritability rigid neck, Kernig right Babinski knee jerks exaggerated	Hemorrhagic	Subarachnoid hemorrhage. Streptococcus viridans.
R. I	26	M	Headache vomiting apathy irritability rigid neck, Kernig	Hemorrhagic	Subarachnoid hemorrhage. P M Subarachnoid hemorrhage.
M M	16	F	Headache vomiting apathy	Hemorrhagic	Subarachnoid hemorrhage.
F P	3½	F	Vomiting convulsions rigid neck, Kernig left knee jerk absent	Normal	Meningismus.
A W	31	M	Headache vomiting rigid neck Kernig	Normal	Meningismus.

tion twenty There were murmurs over the aortic and mitral regions The lungs were clear The spleen was definitely palpable. There was a left subconjunctival hemorrhage. The reflexes were present. There was nuchal rigidity with positive Brudzinski and Kernig signs The spinal fluid was cloudy, showed a large increase of cells, mainly polymorphonuclears, a moderate increase in protein, diminished amount of sugar, and no organisms by smear or culture. The blood culture was positive for a non-hemolytic streptococcus. The diagnosis of subacute bacterial endocarditis was therefore established. It was felt also that the patient had a bacterial meningitis, although no organism were recovered from the spinal fluid

Following spinal drainage there were marked improvement in the meningeal complication and the spinal fluid became normal The patient's general condition, however, became progressively worse, and he died in uremia on February 6, 1933

II Cases with Paralysis (Table II) Paralysis is perhaps the most common neurological complication in subacute bacterial endocarditis It was the outstanding

manifestation in fifteen of our cases and it was also a feature in cases in other groups It was usually of the upper motor neuron variety resulting in a hemiplegia or hemiparesis, although in three instances the involvement appeared to be of the lower motor neuron type. We have no necropsy material illustrative of cord lesions. It is to be noted that even in central lesions, the paralysis may at first seem to be flaccid. It is therefore obvious that the diagnosis of poliomyelitis is sometimes suspected The paresis or paralysis may be of short duration or there may be a transitory paresis on one side followed by a paralysis on the other side. In one instance there was a spastic quadriplegia In our series both sides were equally involved

The exact nature of the lesion can only be inferred, aided by the spinal fluid findings, except in those cases where a necropsy was obtained. It may be assumed that the primary lesion is an embolism, but following the embolization various pathological

developments may occur These will be described in the section on pathology

The spinal fluids in these cases with paralysis showed great variations In some instances the findings were normal In others there was a slight to large increase in cells, with a predominance of either polymorphonuclears or mononuclears, a slight increase in protein, and usually a normal sugar In still others the spinal fluid was hemorrhagic None of the fluids showed the presence of organisms

Since the majority of the cases in this group began with a hemiplegia, it may be of interest to describe a case in which at the onset the diagnosis was poliomyelitis

J M, aged twenty-one, became ill on October 4, 1931, with chills, fever, headache, sore throat, and pain in the back of his neck. His past history showed that he had had rheumatic fever complicated by a cardiac lesion

On physical examination, there was nuchal rigidity, positive Kernig sign, and paralysis of his right arm The heart presented the signs of a double mitral valve lesion A lumbar puncture performed on October 6, yielded a clear fluid, which showed twenty-eight cells,

a slight increase in protein, normal sugar, and no organisms

On October 7 and 8, there were convulsive seizures of the right side followed by an extension of the paralysis On this date there appeared a crop of petechiae over his extremities

October 11, the spinal fluid was xanthochromic.

The patient died on October 12 A necropsy showed chronic aortic, mitral, and tricuspid valvulitis with superimposed vegetative endocarditis The brain showed hemorrhagic infarction of left frontal lobe and smaller infarcts elsewhere throughout the brain substance The spinal fluid was blood tinged. There were also multiple infarcts in the other viscera.

III Cases with Encephalopathy (Table III) In this group of six cases, the patients presented a clinical picture resembling encephalitis Delirium, somnolence, stupor, blurring of vision, diplopia, vertigo, limitation of ocular movements, muscular twitching, masked facies, and increased salivation were among the striking symptoms Some of the cases also had signs of meningeal irritation, changes in the reflexes, paralysis blurring of the disks, and optic neuritis

TABLE II.—CASES WITH PARALYSIS (GROUP II)

Name	Age	Sex	Outstanding neurological symptoms	Spinal fluid findings	Remarks
M H	20	F	Vomiting delirium stupor rigid neck, Kernig pupils dilated no reaction spastic quadriplegia, knee jerk exaggerated, ankle clonus, Babinski, abdominals absent.	No tap	Blood culture Streptococcus viridans
M M	13	F	Headache vomiting rigid neck, pupils dilated, no reaction reflexes absent paresis right arm and leg	Normal	
M C	27	M	Headache, vomiting coma, knee jerk absent right hemiplegia.	Slightly hemorrhagic. Protein increased Sugar normal.	Blood culture Streptococcus viridans
G G	18	F	Slight rigidity of neck, Kernig transitory paralysis of left arm, knee jerks absent.	No tap	
H R.	39	F	Delirium, left spastic hemiplegia, left biceps and patella reflexes exaggerated, left Babinski left abdominals absent.	450 cells—polymorphonuclears. Protein increased Sugar normal	
J L.	14½	F	Headache, right hemiparesis with aphasia, deep reflexes greater on right than on left, abdominals greater on left than on right right Babinski	No tap	
B B	4	F	Slight stiffness of neck, Kernig transitory paresis of left leg.	Fluid blood tinged Protein increased. Sugar normal	Blood culture Streptococcus viridans.
R. C	19	F	Headache, stupor rigid neck, Kernig transitory left hemiparesis, later right hemiplegia with aphasia.	Hemorrhagic	
J M	21	M	Headache rigid neck, Kernig diminished reflexes, paresis of right arm followed by right hemiplegia.	First 28 cells. Sugar normal Protein increased. Later xanthochromic.	P M hemorrhagic infarct left frontal lobe. Multiple emboli
H R.	13	M	Apathy rigid neck, Kernig optic neuritis, right hemiplegia with aphasia, deep reflexes greater on right than on left, right Babinski.	80 cells — mononuclears. Protein increased. Sugar normal	
L. H.	41	F	Headache, disturbance of speech right hemiparesis, deep reflexes exaggerated on right, right Babinski.	Practically normal	
G T	8	M	Headache, vomiting coma, rigid neck, Kernig, contracted pupils, spastic paralysis of left leg left Babinski.	Hemorrhagic	
M T	24	F	Left hemiplegia at onset	No tap	
M McP	16	F	Headache, left hemiplegia, signs of meningeal irritation at first.	Large increase in cells — 60% mononuclears. Protein increased. Sugar slightly diminished.	Had second similar attack.
M H	3½	M	Slight rigidity of neck, Kernig paresis of both lower extremities, knee jerks absent, pupils sluggish to light	105 cells — mononuclears. Protein increased. Sugar normal.	

The spinal fluid findings showed variations similar to those described in the preceding group

Whether the symptoms were due to encephalomalacia, cerebral abscess, encephalitis or various forms of intracranial hemorrhage is a matter of conjecture. Of course a uniformly bloody fluid would prove the presence of hemorrhage, but this might or might not be combined with other lesions

by a cloudy spinal fluid, containing more than 1000 cells, ninety-two per cent polymorphonuclears. Accordingly, she received four doses of antimeningococcic serum intraspinally. However, no organisms were demonstrated and the spinal fluid sugar had remained normal. By July 16, the entire spinal fluid examination was practically normal, but the patient's clinical condition had not improved and certain new features had developed. Her mental reactions were very much retarded. She was stuporous

TABLE III—CASES WITH ENCEPHALOPATHY (GROUP III)

Name	Age	Sex	Outstanding neurological symptoms	Spinal fluid findings	Remarks
M F	29	F	Delirium stupor contracted pupils, optic neuritis right reflexes exaggerated left reflexes diminished, abdominals absent.	Hemorrhagic	Blood culture Streptococcus viridans.
A E	62	F	Headache vertigo blurring of vision, stupor, rigid neck, Kernig pupils sluggish to light, marked spasticity deep reflexes exaggerated on right, bilateral Babinski slight hemiparesis on right, abdominal reflexes absent petechiae.	52 cells — mononuclears. Protein increased Sugar normal	
F N	29	F	Headache, stupor rigid neck and Kernig at onset transitory ankle clonus, knee jerks increased, blurring of discs.	Normal	Blood culture Streptococcus viridans
M L	24	F	Headache stupor, rigid neck, Kernig blurring of vision at onset left knee jerk greater than right, ankle clonus on left, pupils sluggish to light and accommodation, retarded mental reactions, mask like expression, increased salivation.	Early 1000 cells — polymorphonuclears. Sugar normal. Later, fluid normal.	Blood culture Streptococcus viridans
P M	12	F	Headache vomiting stiffness of neck, drowsiness, twitching of left arm, diplopia	200 cells — mononuclears Protein increased Sugar normal	
E H	8	F	Headache, vomiting diplopia, knee jerks absent	Hemorrhagic	

TABLE IV—COMBINED FORMS (GROUP IV)

Name	Age	Sex	Outstanding neurological symptoms	Spinal fluid findings	Remarks
J F	13½	M	Rigid neck, Kernig hyperesthesia, right knee jerk exaggerated left knee jerk absent, paresis of right leg, paralysis of right deltoid, difficulty in swallowing	Protein increased Sugar diminished. Culture Non-hemolytic streptococcus.	Blood culture Non-hemolytic streptococcus. Bacterial meningitis and paralysis.
L P	14	M	Headache vomiting stupor pupils contracted sluggish to light, deep reflexes absent on right, paralysis of right arm and leg left facial palsy, dysphagia.	Cells greatly increased — polymorphonuclears. Protein increased Sugar normal	Blood culture Streptococcus Paralysis and serous meningitis
L D	10	M	Headache vomiting apathy convulsions rigid neck, left hemiplegia.	Moderate increase in cells — mononuclears Proteins increased. Sugar normal	Paralysis and encephalopathy
N H	50	M	Rigid neck, stupor Kernig on left pupils dilated and fixed, right hemiplegia knee jerk increased on left, Babinski on right.	Cells greatly increased — polymorphonuclears. Protein increased. Sugar absent.	Blood culture Streptococcus viridans. P M Emboli of brain and softening of left internal capsule
D C	20	M	Headache vomiting rigid neck, Kernig nystagmus, paralysis of left face and arm numbness and tingling in arms and face	1800 cells — polymorphonuclears	Blood culture Streptococcus viridans. Paralysis and serous meningitis

The following case history is fairly typical of this group

M L, aged twenty-four, became suddenly ill on July 1, 1930, with headache, fever, and blurring of vision. She was seen in consultation on July 16. It was then learned that she had an endocarditis of long standing, following rheumatism. At the beginning of her present illness, stiffness of the neck and a positive Kernig sign developed, suggesting a meningitis, and this diagnosis seemed to be confirmed

at times. Her face had a mask-like expression, and there were periods of increased salivation. The extraocular movements upward and downward were limited. The reactions of the pupils were sluggish to light and accommodation. The abdominal reflexes were diminished. The left patellar reflex was more active than the right and there was ankle clonus on the left. At this time, therefore, she presented the clinical picture of an encephalitis, and in addition there was the history of visual disturbance at the onset of the illness. There were the signs of

a double mitral lesion of the heart and the liver was enlarged. The temperature was 104°F. In view of all the developments, it seemed quite certain that the various neurological manifestations were due to emboli from a subacute bacterial endocarditis. This diagnosis was later confirmed by two blood cultures positive for the streptococcus viridans. The patient died September 17.

IV Combined forms (Table IV) In this group we have listed five cases in which the symptomatology was particularly complex. It is true that in the other groups there was often not a clear-cut and consistent clinical picture but usually one set of symptoms predominated. In these cases, however, the symptoms seemed to be distributed more or less equally over two or more groups. It is obvious that signs of meningeal irritations are present in a large percentage of all the cases.

In all five of these cases there was some form of paralysis. In two instances there were also symptoms of encephalopathy. In one of these there was evidence in the spinal fluid of a meningitis. The nature of this it is difficult to state, since although no organisms were found, the spinal fluid sugar was absent. Moreover at necropsy no definite evidence of meningitis was noted in the gross. Unfortunately a microscopic examination was not made.

In two other cases a serous meningitis was superimposed and in the fifth case there was a definite bacterial meningitis.

D. C., aged twenty, had been running a low grade fever for some time. On February 5, 1932 he became suddenly worse with headache, vomiting, and a rise in temperature. Rigid neck and positive Kernig sign and paralysis of the left face and arm developed.

A lumbar puncture on February 6 showed a cloudy fluid with about 2000 cells, polymorphonuclears, and an increase in protein. No organisms were demonstrated and the sugar was not determined. Antimeningococcic serum was given at once intraspinally. On this date he complained of numbness and tingling in the left arm and face. This was of short duration. The patellar reflexes were diminished and there was a nystagmus. The heart showed evidence of valvular lesions with murmurs over the apex and base. A positive blood culture for streptococcus viridans was later obtained. The patient died late in March. This case showed a combination of paralysis and serous meningitis.

Most of the changes found in the brain are the result of embolization of a cerebral vessel or vessels. This leads in most instances to the development of a single or multiple infarcts, which may involve any region of the brain. The areas of necrosis vary in degree from slight soft-

ening to complete destruction of the brain tissue, resulting in cavity formation. Not infrequently the brain substance in the infarcted region is of semifluid consistency. The areas of infarction are occasionally hemorrhagic, and are frequently surrounded by a narrow zone of brownish-yellow pigment. A localized hemorrhagic pachymeningitis is not infrequently superimposed on these areas of softening. Occasionally an infarct may heal. It is to be noted that the embolized or throm-



Fig 1 Destruction of a portion of the vessel, with cellular infiltration. Note break in elastica

bosed vessel can rarely be determined in the gross. Microscopically, however, one can frequently find a necrotizing arteritis, with destruction of varying portions of the vessel wall, thrombus formation, cellular infiltration, and intimal proliferation (Figs 1, 2, 3).

The septic emboli may occasionally cause the formation of large or small brain abscesses. Libman, as previously pointed out, does not regard these as abscesses in the true sense of the word, but as areas of softening, secondarily invaded by leukocytes.

If the septic embolus involves a vessel near the surface of the brain or in the meninges, it may lead to the development

The spinal fluid findings showed variations similar to those described in the preceding group

Whether the symptoms were due to encephalomalacia, cerebral abscess, encephalitis or various forms of intracranial hemorrhage is a matter of conjecture. Of course a uniformly bloody fluid would prove the presence of hemorrhage, but this might or might not be combined with other lesions

by a cloudy spinal fluid, containing more than 1000 cells, ninety-two per cent polymorphonuclears. Accordingly, she received four doses of antimeningococcus serum intraspinally. However, no organisms were demonstrated and the spinal fluid sugar had remained normal. By July 16, the entire spinal fluid examination was practically normal, but the patient's clinical condition had not improved and certain new features had developed. Her mental reactions were very much retarded. She was stuporous

TABLE III.—CASES WITH ENCEPHALOPATHY (GROUP III)

Name	Age	Sex	Outstanding neurological symptoms	Spinal fluid findings	Remarks
M F	29	F	Delirium, stupor, contracted pupils, optic neuritis, right reflexes exaggerated, left reflexes diminished, abdominals absent.	Hemorrhagic	Blood culture Streptococcus viridans.
A. E	62	F	Headache, vertigo, blurring of vision, stupor, rigid neck, Kernig, pupils sluggish to light, marked spasticity, deep reflexes exaggerated on right, bilateral Babinski, slight hemiparesis on right, abdominal reflexes absent, petechiae.	52 cells — mononuclears. Protein increased. Sugar normal.	
F N	29	F	Headache, stupor, rigid neck and Kernig at onset, transitory ankle clonus, knee jerks increased, blurring of discs.	Normal	Blood culture Streptococcus viridans.
M L	24	F	Headache, stupor, rigid neck, Kernig, blurring of vision at onset, left knee jerk greater than right, ankle clonus on left, pupils sluggish to light and accommodation, retarded mental reactions, mask like expression, increased salivation.	Early 1000 cells — polymorphonuclears, Sugar normal. Later, fluid normal.	Blood culture Streptococcus viridans.
P M	12	F	Headache, vomiting, stiffness of neck, drowsiness, twitching of left arm, diplopia	200 cells — mononuclears. Protein increased. Sugar normal.	
E H	8	F	Headache, vomiting, diplopia, knee jerks absent.	Hemorrhagic	

TABLE IV.—COMBINED FORMS (GROUP IV)

Name	Age	Sex	Outstanding neurological symptoms	Spinal fluid findings	Remarks
J F	13½	M	Rigid neck, Kernig, hyperesthesia, right knee jerk exaggerated, left knee jerk absent, paresis of right leg, paralysis of right deltoid, difficulty in swallowing	Protein increased. Sugar diminished. Culture Non-hemolytic streptococcus.	Blood culture Non-hemolytic streptococcus. Bacterial meningitis and paralysis.
L P	14	M	Headache, vomiting, stupor, pupils contracted, sluggish to light, deep reflexes absent on right, paralysis of right arm and leg, left facial palsy, dysphagia.	Cells greatly increased — polymorphonuclears. Protein increased. Sugar normal.	Blood culture Streptococcus viridans. Paralysis and serous meningitis.
L D	10	M	Headache, vomiting, apathy, convulsions, rigid neck, left hemiplegia.	Moderate increase in cells — mononuclears. Proteins increased. Sugar normal.	Paralysis and encephalopathy
N H	50	M	Rigid neck, stupor, Kernig on left, pupils dilated and fixed, right hemiplegia, knee jerk increased on left, Babinski on right	Cells greatly increased — polymorphonuclears. Protein increased. Sugar absent.	Blood culture Streptococcus viridans. P M Emboli of brain and softening of left internal capsule
D C	20	M	Headache, vomiting, rigid neck, Kernig, nystagmus, paralysis of left face and arm, numbness and tingling in arms and face.	1800 cells — polymorphonuclears	Blood culture Streptococcus viridans. Paralysis and serous meningitis.

The following case history is fairly typical of this group

M L, aged twenty-four, became suddenly ill on July 1, 1930, with headache, fever, and blurring of vision. She was seen in consultation on July 16. It was then learned that she had an endocarditis of long standing, following rheumatism. At the beginning of her present illness, stiffness of the neck and a positive Kernig sign developed, suggesting a meningitis, and this diagnosis seemed to be confirmed

at times. Her face had a mask-like expression, and there were periods of increased salivation. The extraocular movements upward and downward were limited. The reactions of the pupils were sluggish to light and accommodation. The abdominal reflexes were diminished. The left patellar reflex was more active than the right and there was ankle clonus on the left. At this time, therefore, she presented the clinical picture of an encephalitis, and in addition there was the history of visual disturbance at the onset of the illness. There were the signs of

hemorrhagic pachymeningitis The various forms of intracranial hemorrhage are probably due in most instances to a rupture of a mycotic or embolic aneurysm Occasionally injury to the capillaries as a result of the infection or perhaps as an expression of a blood dyscrasia may be responsible for the bleeding Libman was the first to stress these facts It is to be noted that one can practically never find the blood vessel involved in the bleeding process

Other changes occasionally found are edema of the brain and varying degrees of congestion of the vessels on the surface of the brain These findings may account for the clinical pictures of meningismus and transitory paresis

Summary

We have briefly described the neurological complications in forty-one cases

Discussion

DR. EMANUEL LIBMAN, New York City—It would have been advantageous, I believe, for Dr Joseph H² Globus to have opened the discussion, because being so great an expert in neuropathology, he could have paved the way for a clinical discussion by myself It is now necessary for me to go into a short statement of pathological data which can be mainly derived from the literature. Dr Neal and her colleagues have made a clinical classification that appears to me to be practical According to Kimmelstiel, a localized or diffuse meningoencephalitis is rather common in subacute bacterial endocarditis, having found it in eight of eleven cases The lesion may be ischemic in nature, or inflammatory, or both

Lesions of the arteries are very frequent and varied. Gross changes are produced by embolisms, embolic aneurysms, and thromboses Embolic aneurysms are due to lodgement of pieces of vegetation, or of clumps of bacteria, in the walls of the arteries Such aneurysms may rupture, and hemorrhage result But hemorrhage may occur from a necrotic area in the wall, without the development of an aneurysm. Small inflammatory areas may be found in the wall, due to bacterial infection.

There is another lesion of the arteries in which bacteria are not found. It consists of an arteritis due to an apparently toxic (allergic?) effect of the bacterial endocardial lesions There may be found necrosis of the wall, periarterial changes, intimal

proliferation and thrombosis It is important to remember that closure of vessels may arise from such thrombotic lesions and are not always embolic in origin

of subacute bacterial endocarditis These patients presented, in the main, signs of meningeal irritation, paralysis of various types, and features of encephalopathy The fundamental lesion was usually an embolization of a cerebral vessel or vessels which subsequently led to the development of cerebral infarction, abscess, bacterial or serous meningitis, and the various forms of intracranial hemorrhage

We wish to express our appreciation to Dr Douglas Symmers and to Dr Lewis D Stevenson for permitting us to use pathological material from Bellevue Hospital

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There may be multiple areas of softening due to closure of vessels, and miliary or occasionally abscesses These abscesses are not true primarily purulent foci, but are probably brought about by autolysis and secondary polynuclear invasion in infarcted areas I was glad to hear Dr Neal speak of possible involvement of the spinal cord In one case, a funicular myelosis has been described, and in animal experiments, Kimmelstiel produced not only endocarditis, meningoencephalitis infarction, and abscesses, but also funicular myelosis

I would like to emphasize what Dr Neal said of the cases in which the cerebrospinal fluid shows polynuclear cells, with or without the presence of streptococci There is a polynuclear aseptic meningitis in cases of subacute bacterial endocarditis, and a polynuclear streptococcal meningitis It is to be remembered that the latter also occurs without the presence of endocarditis

As regards blood fluids, they may be due to rupture of an embolic aneurysm, or to a hemorrhagic tendency alone Such a condition need not be fatal In 1918 I described a simple method for determining whether an aspirated bloody cerebrospinal fluid was due to traumatism or not, and I have found this method often to be of value Within a few hours after hemorrhage (as



Fig 2 Thrombosed artery with some destruction of the arterial wall. There is also edema and necrosis of surrounding brain substance.

of bacterial meningitis, which is occasionally of short duration. In these cases one rarely observes a purulent secretion but rather a marked injection of the meninges which microscopically show the typical cellular exudate (Fig 4). Congestion of the meninges may also be caused by a serous meningitis which is not an infrequent accompaniment of infarction or abscess of the brain.

One of the most striking of pathological findings is the presence of intracranial hemorrhage, most commonly of the subarachnoid type. It may, however,



Fig 3 Intimal proliferation with recanalization.



Fig 4 Meningitis with the typical cellular exudate.

occur in the brain parenchyma, particularly the internal capsule, and occasionally in one of the ventricles. Numerous small hemorrhages in the brain substance are not rare. We have already mentioned the frequent occurrence of

URETHRAL DISEASE IN WOMEN

An Evaluation of the Present Knowledge

ARTHUR H PAINE, M D, *Rochester*

The study of the anatomy and the pathology of the female urethra and bladder neck, and the appreciation of the importance of the symptom complex and misery to the sex from disorders of these structures, has not kept pace with the signal advance in upper urinary tract diseases and the lower tract of the male

The lesions of the lower male tract are predominantly obstructive and menacing to health and life, and have been accorded intensive study since the earliest history of urology. Disorders of the urethra and bladder neck in the female relatively seldom produce secondary pathological inroads upon the general health, and rarely menace life.

To appreciate the reasons for this tardiness one need but consider the evolution of urology. Formerly most of the urological clinics and teaching centers, and many prominent genitourinary surgeons, had nearly a total male clientele. Female urological cases remained in the hands of the general practitioner, the surgeon, and the gynecologist.

The evolution of the cystoscope has been a factor in the delay. The popular instrument having been the right angle lens of the Brown-Buerger type, urethral pathology was not visible. As one speaker has stated "the female urethra has been considered merely a structure upon which to rest a cystoscope during bladder observation and urethral catheterization."

With the increase in the number of women attending urological clinics, and their reference to the urological service in hospital and private practice, and with the advent of fore-oblique lenses and increased use of the Kelly type of open scope, an active interest and study of urethral and bladder neck pathology have been stimulated. As a result, an appreciation of the vast amount of suffering from this source is beginning to be realized. The necessity of further study is recognized, and much important patho-

logical and clinical information is being collected.

Methods of diagnosis have been extended beyond the cystoscope to the use of bulb bougies, Hegar dilators, cystometers, urethrograms, and cystograms.

The two volume work, *History of Urology* (1933), heralds all the important advances in urology, but no allusion is made to any study or advancement in the treatment of so common a source of misery as the female urethra, yet, two decades ago, Bugbee, Bransford Lewis, Arthur Chute, and a few others called attention to the prevalence and importance of urethral disease in women. It has remained necessary for the work of Einar Thomsen, Van Dusen and Luney, and Crabtree on anatomy of the female urethra and trigone, and the work of Stevens, Folsom, Pugh, Furniss, and Ormond on pathology, clinical manifestation, and treatment in the past few years, to stimulate interest and direct serious consideration to the subject.

Anatomical studies have clarified and added to the knowledge of the supports and closing mechanism of the female bladder. Studies of the parous bladder and urethra by combined urethrography, cystography, and cystoscopy have suggested improvement in methods and technique for the correction of cystocele and operative procedure to control incontinence. A definite anterior curvature and a fairly sharp angulation at the upper third of the urethra has been demonstrated. The perivaginal fascia, one of the chief supports of the bladder, is frequently injured, and as a result, the curvature and angulation of the urethra and its relation to the trigone is altered.

The diagnosis, understanding of clinical manifestations, and application of accurate therapy to any disease must depend upon a thorough knowledge of the gross and histological anatomy and the pathological changes in the structures involved.

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New York City, April 29, 1936*

early as three hours and perhaps less) there is apt to develop a lymphocytosis in the fluid. If one makes a differential leukocyte count of the fluid and at the same time of the blood, the former may be found to contain twenty-thirty per cent more lymphocytes than the latter. Sometimes when a meningeal reaction has already taken place, a secondary bleeding may be suspected if there develops suddenly a sharp pain above the eye.

Symptoms due to an existing encephalitis may be very marked. In one instance we had reason to suspect that the patient was suffering from subacute bacterial endocarditis and epidemic encephalitis (during an epidemic). Dr Neal has referred to the rather frequent slowing up of the mentality and a tendency to a mask-like expression of the face. I would also like to emphasize tremor as a symptom, especially tremor of

the hands. I do not know that it necessarily means striatal involvement. Cases of endocarditis have been described with definite lesions in the corpus striatum, characterized by rigidity and tremor, and the absence of pyramidal symptoms. Involvement of the substantia nigra has been described, with somnolence as the outstanding symptom. Several cases of hypophyseal cachexia have been noted, due to embolization of the anterior lobe of the hypophysis.

A hemiplegia may begin intermittently. For instance, it may happen that a patient goes to his place of work in the morning and comes back in the afternoon with a hemiparesis, is all right the next morning, and then develops paresis in the afternoon, which may go on to complete hemiplegia. The hemiplegia in this disease need not be permanent. Stahl described five cases in which it disappeared in four to fourteen days.

SOCIALIZED MEDICINE NOT WANTED BY LABOR

What the self-respecting laboring man wants is the right to choose his own personal physician, and a wage sufficient to pay the bill. He has found by unfortunate experience that medical attendance supplied by paternalistic schemes is more likely than not to turn out unsatisfactorily. That is the essence of an intelligent article by Mr James H. Anderson, editor of the *Kansas City Labor News*, and published in the October 10 issue of the *Jackson County Medical Journal* (Kansas City). He says:

Free medical care, including hospitalization, clinics and medicine, supported and maintained by states and local communities, through a general taxation, has to a certain extent existed for ages. Such care and such hospitalization is essential and commendable and should be continued, but such free service was created for the purpose of giving aid and succor to those financially unable to pay their own way. I do not believe, and I think you will agree with me, that it was not created or intended for those who were or are able to pay.

Labor is not in favor of charity, the dole or relief for those who are able to work and earn a decent pay, nor in favor of so-called free medical care, whether furnished by corporations employing groups of men and women, or whether supported and maintained by federal, state or local communities, because experience has taught us that such service is not always very satisfactory, and in the long run those receiving such service have to foot the bill anyway, either through deduction in pay or through taxation.

It has been found that physicians for instance, furnished by employers, or even by labor and fraternal organizations, as a general rule do not render as satisfactory service

as those privately employed by the patient himself.

Men of labor as well as others, in case of sickness or disability, prefer to choose their own medical attendant in whom they have confidence and who they know will use all of his knowledge, science and ability for a speedy recovery.

I do not believe that labor looks with much favor on compulsory insurance. *** Opportunity to work and to earn is the cherished hope of all members of organized labor. The American Federation of Labor was founded for the purpose of obtaining for its members decent wages, reasonable working hours and sanitary working and living conditions.

What labor wants is a decent wage—a wage sufficient to meet the requirements of the American standard of living, a wage that will provide sanitary housing, wholesome food, decent clothing, enough to keep the children in school instead of in the sweat shop, clean amusements, medical care, premiums of health, accident and life insurance, and all those other things which are so essential to the well-being of mankind, besides some kind of social security that will care for the aged.

Now, to the medical profession I will say this in all candor and sincerity that, if the working people were permitted to work and would receive decent wages, if the unemployment of those able and willing to work was reduced to a minimum, they could and would, when sick or disabled, be able to employ and pay their own medical attendant, buy their own medicine and pay their own hospital bills. Physicians and surgeons would receive their just and equitable compensation for their services, hospital bills and medicine would be paid by the patients themselves without federal, state or local aid and without taxation being placed on the general public.

Helper and Scott have recently shown that ninety-nine per cent of a series of 694 infants and children had pus cells in voided urine, and catheterization ruled out pyuria of kidney and bladder origin in all but thirteen per cent of cases. Thus, it may be assumed vulvar contamination and the urethra are the source of pyuria in the vast majority of cases. It is true that the diagnosis of pyelitis in female infants and children is frequently made solely upon the finding of pyuria from voided specimens. The routine use of the catheter to check upon voided specimens will greatly reduce the number of diagnoses of pyelitis, and direct attention to meatal stenosis, urethritis, and urethrotrigonitis in female children. Those who see a large number of children from an urological aspect are convinced that congenital and acquired disease of the infantile and juvenile urethra are not rare, and account for much urological morbidity. W E Stevens has recently studied the literature and enlightened us on the occurrence of congenital malformations of the female urethra. It is reasonable to assume Dr Stevens' contribution only suggests the frequency of congenital defects when one considers the large number of unrecognized minor defects, as stenosis of the meatus and hypospadias. It is well-known that congenital defects predispose to pathological changes, and this is especially true of tubular structures, and the urinary tract in particular, since stasis is engendered favoring infection.

In early and middle adult life during the period of greatest sexual capacity, and the menstrual and child bearing activity, the female urethra is especially prone to trauma, congestion, and infection. Bladder dysfunction will manifest disorders of the urethra and trigone by frequency, dysuria, and pain. These symptoms should be elicited in history taking, and thoughtfully evaluated and investigated. A grain of prevention at the onset may prevent years of annoyance or suffering, and advanced pathological changes in later life.

Elderly cases in either sex are still considered in both the lay and professional minds to have a physiological excuse for bladder dysfunction. Just as early manifestations of prostatic obstruction are condoned as senile changes to be

expected and tolerated, so are the distressing manifestations of urethrotrigonitis in elderly women accepted as a penalty of attaining ripe old age.

As urethritis in the male is predominantly gonorrheal, the opposite is true in the female. Gonorrhea is undoubtedly the cause of chronic urethral diseases and stricture in the female, but the relative number of cases due to this disease is very small.

Discharges from vaginitis, cervicitis and puerperal infection, carelessness about vulvar hygiene and menstrual napkins, contamination other than gonorrheal by coitus, and by feces, afford a varied and fertile source of retrograde urethral infection.

The history of attacks of pyelitis, possibly unrecognized at the time of their occurrence, or attacks of acute urethrotrigonitis, may be elicited by careful questioning to supply the etiology in cases of chronic urethritis.

No conclusive studies of the bacteriology of female urethritis have been made. It is obvious how difficult this is. The urine obtained by catheter from the bladder is often sterile. Contamination from the meatus would often vitiate swab or loop cultures, and organisms from the surface of the mucosa might not represent the true infecting agents in the deeper structures.

Symptoms

The symptoms vary with the pathology. Frequency is the most common and constant symptom. Many patients are quite incapacitated for work or social activity. It is chiefly by day, when active upon the feet, and most distressing during the early forenoon, apparently responding to the changes in blood supply and the alteration of the position of the trigone and urethra incident to the change from recumbent to standing position.

Nocturia may be absent. When present, lesions of the upper urethra trigone or bladder should be suspected. Like day frequency, it is often most pronounced immediately upon retiring, as the irritated urethra and trigone respond to depletion of congestion, and ptosed structures recede with recumbency.

A frequent symptom is a sensation in

The embryological origin and homologies of the entire female urethra and the male prostatic urethra, are not agreed upon at present

However, it is true that the anterior two-thirds of the urethra is lined with squamous epithelium, and is credited with being of ectodermal origin. Therefore, it seems contradictory that Skene's tubules and the paraurethral glands are accepted as homologues of the prostatic ducts and tubules which are of entodermal origin. The study of embryos of both sexes up to 144 mm, shows the presence of identical glandular structures at the base of the trigone and around the sphincteric region. These predominate in the male and form the prostatic gland structures of the adult male. They vary in frequency of occurrence in the female embryo, and undoubtedly persist to a greater or lesser degree in the upper-third of the adult female urethra and caudad extremity of the trigone, since this portion of the female urethra is of entodermal origin and lined with transitional epithelium similar to and merging with that of the trigone.

Some consider that the structures described, and the histological specimens exhibited purporting to be such glands, show only epithelial inclusion in chronic inflammatory hyperplastic tissue, and are of the nature of Brunn's nests. The acini are interpreted as central cystic degeneration. The studies of Folsom and Chwalla would seem to definitely establish the presence of these glands. The pathology of the upper urethra and trigone may be explained by accepting the presence of these glands.

That the anterior two-thirds of the urethra is of ectodermal origin and lined with squamous epithelium, the presence of Skene's tubules near the meatus, and a similar group on the floor dipping down towards the anterior vaginal wall, are undisputed.

At the meatus and in the anterior two-thirds of the urethra, certain definite pathological changes occur, *viz*

1 Congenital stenosis

2 Acquired infiltration and stricture, the products of chronic inflammatory processes involving the glandular structures in the submucosa.

Most writers stress the prevalence of stricture, estimating its presence in thirty-

seven per cent of all urinary disturbances, and state that eighty-five per cent of such strictures occur at the meatus. Congenital discrepancy in caliber at this point is undoubtedly very common in females, as it is in males. Strictures at the meatus are more commonly due to congenital atresia than to an inflammatory process. A congenitally small meatus plays the role of stricture elsewhere in the canal, the retention of a drop or fraction thereof of urine with consequent dribbling on the meatus and water-logging of the mucosa immediately behind it. This retention is actually stasis. It predisposes to infection. When infection occurs, drainage is further retarded by swelling and the gland structures and submucosa are invaded. Finally proliferative granular urethritis supervenes, and the so-called caruncle, stricture, or both, are present at the meatus.

3 Hyperplasia with extrusion thru the meatus of the urethral mucosa

4 Caruncle. This term is unfortunate as it means only a piece of flesh, and assumes all protruding growths from the meatus to be neoplasms and demanding the same consideration. Caruncle is peculiar to the lower portion of the female urethra. Its origin is believed to be Skene's tubules. Three types are recognized: (a) Granuloma which is a hyperplastic, chronic inflammatory product, the result of chronic urethritis, (b) papillary angioma, and (c) telangiectatic mucoid polyp, both new growths. Histologically, glandular tissue, newly formed blood vessels, and inflammatory infiltration are found.

5 Suburethral abscess and diverticulae, sometimes containing calculi

6 Carcinoma

The pathology, like the origin and structure of the upper-third of the urethra and sphincter region, differs from the lower urethra. Here is found hyperplasia, infiltration with fibrosis, polypoid and cystic degeneration.

Various writers state the frequency of urethral diseases as sixty per cent of all women consulting a physician as gynecological cases, and eighty per cent of all female urological cases.

The profession is still culpable in failure to give due or serious consideration to varying degrees of bladder dysfunction in both sexes, at all ages. In infancy and childhood, enuresis, frequency, and dysuria are passed over lightly. The former with the comforting assurance that the child will outgrow it, and the latter two with the blanket diagnosis of pyelitis.

one-third may show dilated vessels, polypoid or cystic degeneration, and a corrugated, irregular, dusky outline of the internal sphincter instead of the smooth, regular, glistening, pink mucosa of the normal

Actual heaping up of tissue at the sphincter floor, with a sharp declivity to the trigone, is not as rare as the literature would indicate. Trabeculation and residual urine may accompany this finding. Apparently a true bladder neck contracture exists.

Differential Diagnosis

Excepting pregnancy, very large or impacted fibroids, pressure of the uterus upon the bladder can be considered only physiological, and never the cause of bladder dysfunction. Too many patients are still put off with this opinion, or still worse, subjected to abdominal surgery, only to find their bladder symptoms persist after operation.

States of the urine other than infection, as polyuria from immoderate fluid intake, and that of diabetes, should not be assigned etiological significance. While alkalis may relieve distressing frequency and dysuria, "acid urine" *per se* is never a causative factor.

Treatment

The vast majority of cases have infiltration and stricture as their basis and respond dramatically to simple dilatation with a sound. It is a common observation that the first instrumentation, usually a cystoscope, gives signal relief. To avoid recurrence, gradual, gentle, progressive intermittent dilatation should be carried out. Only after high dilatation—33 to 40° F in adults—is attained, is a reasonable permanency of cure assured. If the meatus seems tight below 30° F, meatotomy should be performed.

The granuloma type of caruncle will often extrude and be more amenable to treatment after several dilatations. If small in amount, it may be grasped with Allis forceps, its base transfixed, and coagulated at several points. Complete destruction is not necessary nor advisable. The surface will slough and small remaining points may be coagulated at a future sitting. Excessive scar tissue with ensuing contracture should be avoided. Thus large,

and especially annular growths, are better removed by sharp dissection, and the bleeding points coagulated after removal. Since this type of caruncle is a product of chronic inflammation, never be content with its removal without thorough treatment of the underlying chronic urethritis.

The telangiectatic variety springing from any point in the meatal circumference is essentially a benign new growth, and is seldom accompanied by urethral symptoms. Simple, thorough coagulation will suffice.

The papillary angioma shows potential or actual malignant arrangement of structure. After destruction by coagulation, the implantation of a seed or two of radium emanation insures against recurrence and may reduce the incidence of urethral carcinoma.

Acute urethro-trigonitis is best treated by the administration of alkalis and sedatives, and the injection through the urethra into the empty bladder of weak solutions of mild silver proteninate or neutral acriflavine. Except to obtain diagnostic specimens, the use of the catheter should be avoided, as should lavage, or irrigation of the bladder.

The importance of ruling out upper tract disease, especially tuberculosis and intrinsic disease of the bladder, should be borne in mind. When hematuria has occurred, the middle and upper urinary tracts must be carefully and fully eliminated as the source of the bleeding.

The irritation of atrophic vaginitis and trichomonas vaginalis infestation may simulate urethral pain and distress. These conditions should be recognized and eradicated. Cystometric studies will rule out the cord bladder.

A fair number of cases presenting one or more classical symptoms will not respond to the above measures. In these, polypoid, cystic, infiltrative or hyperplastic changes will be found in the upper third of the urethra, sphincter, and trigone. These will require the destruction of polyps and cysts by coagulation. Topical application of silver nitrate through an appropriate cystoscope will control granular hyperplastic urethritis. Occasionally the punch or resectoscope will be required to remove the obstructive tissue.

the urethra or bladder, varying from consciousness of these structures to severe pain. It is not related to nor relieved by voiding. This seems to distress the patient and produce secondary nervousness more than any other one symptom. Dysuria of some degree, from slight burning to severe terminal tenesmus, is usually present.

Urgency is commonly present. It varies in degree from slight inconvenience to near incontinence. It indicates involvement of the upper urethra, the trigone or the bladder.

Incontinence is usually due to defective musculature, but occasionally may be cured by the absorption of infiltration or fibrosis of the submucosa and the muscularis, or the destruction of hyperplastic or granulomatous tissue within the lumen of the urethra which interfere with closure.

Hematuria is usually terminal and accompanied by tenesmus. It occurs in acute urethro-trigonitis or acute exacerbation of chronic urethritis. Occasionally the telangiectatic caruncle will bleed. This occurs independent of urination, stains the clothing, and may be mistaken by the patient for bleeding from the vagina or rectum.

Difficult starting or propelling the urinary stream is not infrequent. Stricture or hyperplasia, or severe dislocation from cystocele, is usually present.

Referred pain is not uncommon and may be misleading. It is described as hypogastric, ureteral, vaginal, and to the groin, thighs, or lumbosacral region. It is truly astonishing to see some of these remote pains disappear with the correction of the urethral disease. While many patients with urethral disease have naturally unstable, nervous temperaments, the general nervous manifestations should be attributed to the annoyance and pain of the disease, rather than considered the cause of the urethral symptoms. Some cases have been driven to the verge of insanity by years of suffering from unrecognized or ill-treated urethral disease.

Diagnosis

Symptoms of bladder dysfunction should be sought in the history of every female patient, especially gynecological cases. Inspection of the fourchette should

note the presence of vaginal discharge and the appearance of the external urethral meatus.

Gentle expression of the contents of Bartholin's, the vestibular and Skene's glands will disclose purulent secretion if present for microscopic study. Varying degrees of cystocele should be observed, the cervix uteri inspected, and smears made for gonococci and trichomonas vaginalis if indications warrant. Atrophic vaginitis should be recognized and a bimanual pelvic palpation done, except where contraindicated.

The urethra should be palpated through the anterior vaginal wall—dense thickening, suburethral abscess, and diverticulae containing calculi, may be detected.

Stenosis of the meatus may be obvious. Extrusion of hyperplastic granular mucosa may be present or one of the varieties of caruncle observed.

A specimen of urine obtained by soft rubber catheter, negative chemically and microscopically, makes the diagnosis of urethral disease when characteristic symptoms are present. If the catheterized urine contains erythrocytes (nontraumatic), pus cells and bacteria, disease of the bladder and upper tract must be suspected. The diagnosis of urethritis can then be made only by ruling out the middle and upper tract by complete urological study. Having decided the urethra alone is responsible for the symptoms, it should be calibrated with the bougie a boule, and inspected by some form of cystoscope permitting a view of the entire circumference of the canal, sphincteric orifice, and trigone.

Bladder capacity should be estimated at this time. Many of the bladders accompanying long-standing chronic urethritis have lost their capacity as a result of frequent urination, or may be the seat of chronic systitis secondary to chronic pyelitis, chronic purulent urethritis, or chronic interstitial cystitis. While the correction of urethral disease will usually restore normal bladder capacity, some cases require hydrostatic dilatation before frequency will cease.

The urethroscopic findings belong in the realm of the urologist. It will suffice to say that redundant, granular mucosa may be observed in the anterior two-thirds, and in addition to this the posterior

ELECTRIC AUTOMATIC SERIALOGRAPH WITH CASSETTE HOLDER

MOSES EINHORN, M D, *New York City*

The serialograph, a device whereby several Roentgen exposures are obtainable on a single film, has been in use now for the past few years. The various types are more or less identical in construction, permitting from four to twelve exposures to be taken on a film. All of these serialographs necessitate shifting the cassette upon the completion of each exposure.

In a previous article,¹ I described a serialograph, which is also operated automatically, but the entire mechanism is built around a spring motor which enables a tray holding the cassette to revolve. The tray is attached to a metal disk with four notches, each corresponding to one-quarter of the circumference of the tray. A lever with a small projection at its outer end is held tightly to the side of the disk by a wire spring. An electromagnet is placed behind the lever, and upon pressing a button from a distance, the magnet is electrified, which in turn pulls the lever, enabling the tray to revolve. As soon as the button is released, the current is broken, the magnet demagnetized, and the lever is drawn toward the disk by the attached spring. While the disk rotates, the projection at the outer end of the lever follows its course in the opposite direction and upon reaching the first notch, causes the tray to stop rotating. In this manner, each time the button is pushed the cassette revolves one-quarter of its circumference and stops automatically.

Since then, the serialograph has been modified, so that the entire mechanism is now built around an electric motor, entirely eliminating the lever, the spring, and the magnet system. The new serialograph consists of two units: the cabinet and the control box. The cabinet is made of aluminum, the front of which is lined with lead, with the exception of a small square area, five by five inches, corresponding to the marked surface of the cabinet to permit the penetration of the rays (Fig 1). The top of the cabinet is fastened to a ball-bearing sliding arm, which is hooked to a cable, and regulated by a counter-weight.

The cassette, ten by twelve inches, is inserted through a small door provided on one side of the cabinet, (Fig 2), and held in position by a tray attached to the electric motor mechanism. Upon pressing a button at the control box placed at a distance from the cabinet, a current is made and the motor enables a tray, which contains the cassette, to rotate only a quarter of its circumference, bringing an unexposed quarter of the film directly beneath the marked area, and automatically breaking the current.

The apparatus is connected with a system of lights contained in the remote control box, which flashes a white light after the first three exposures, and a red light to indicate the completion of the fourth and final exposure.

The front part of the cabinet is constructed so that it may be used also as a

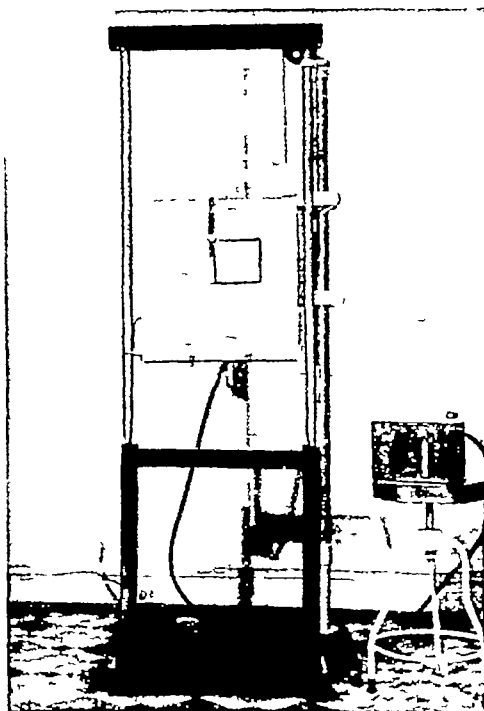


Fig 1

Suburethral abscess requires incision and drainage through the anterior vaginal wall Diverticulæ and calculi are re-

moved by this route Plastic repair may be necessary at a later time

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Discussion

DR GEORGE W STARK, Syracuse—Dr Hunner discussed the female urethra about 1910 According to the literature that is being published I would say that the modern urologist had rediscovered it about 1930

As to whether cystocele is a causative factor in infections in the female urethra, I wish to state that I have had many cases

of urethritis, where a cystocele was present, get well under treatment, and I have also seen many cystoceles operated without correcting the urethritis

I still feel that the real etiologic factor in infections in the female urethra is the napkin, massaging infectious matter from the vagina into the urethra

COLLEGE TO TRAIN MEDICAL SLEUTHS

Physicians are to be trained in scientific crime detection in the Department of Forensic Medicine of the New York University College of Medicine, we read in an announcement to the press Says Dean Wyckoff

"We found a widespread attitude of indifference toward the deficiencies of a system whereby politically appointed coroners with little medical training are authorized to pass on questions and problems which only a pathologist or a toxicologist can answer"

Remarking that as a whole forensic medicine is in worse state than was public health twenty-five years ago, Dean Wyckoff expressed the hope that after a broad program of education "a similar demand (as in public health) for men trained in legal medicine" would be created

"With a few local exceptions, the entire country depends for reports on suspicious and violent deaths on a system established

nearly 1,000 years ago and hardly changed since that time," Dean Wyckoff said

"In only a few places, such as New York City and Newark, is provision made for a scientifically trained medical officer to investigate all deaths by violence, sudden deaths and deaths under suspicious circumstances where crime may be suspected Yet the experience of these cities has been that one death out of every five falls into one of these classifications"

The new program will include discussions of the laws concerning medical examinations after sudden or violent deaths, the technic of examination, deaths from natural causes which become cases for the medical examiner, and medical jurisprudence This course will consist of twenty-five Saturday morning lectures and will be given by the entire staff of the forensic medicine department Photographs, x-rays, and other exhibits from the offices of the New York and Newark medical examiners will be used

NU SIGMA NU SMOKER

The Nu Sigma Nu Alumni Association of New York will have its annual smoker on Dec 4, at 8 P M., at the Phi Gamma Delta Club, 106 West 56 St, New York

City It is requested that all alumni who can attend notify the Secretary, Dr Norman E Titus, Room 2207, 730 Fifth Avenue, New York City

TREATMENT OF INFECTED WOUNDS WITH AZOCHLORAMID

LEON E. SUTTON, M.D. AND JOHN VAN DUYN, 2ND, M.D., *Syracuse*

*From the Department of Surgery, Syracuse University
College of Medicine and the University Hospital*

Azochloramid (N-N-Dichloroazodicarbonamidine) is a new chlorine antiseptic recently accepted by the Council on Pharmacy and Chemistry.¹ It has been shown to have strong antiseptic properties and greater stability in the presence of organic matter than other chlorine compounds used for bactericidal purposes.² The following study was undertaken with the hope of finding in azochloramid a more satisfactory chlorine antiseptic than those at present available.

The active treatment of infected wounds on many hospital wards consists mainly in applications of hot boric packs or irrigations with Dakin's solution. The boric packs are reasonably effective if the wound is not deep or pocketed and if little necrosis has occurred. If the wound is extensive and sloughing, the standard Carrel-Dakin technic is usually successful. This technic, however, is complicated, requires special equipment, and has been discontinued by many hospitals, although no satisfactory substitute has been found.

Most of the wounds seen in a general hospital lie somewhere between the small shallow and the extensive sloughing types. The treatment is usually either inadequate, laborious, or time consuming. An antiseptic that would combine the simplicity of boric applications with the efficacy of Dakin's technic would offer a more satisfactory treatment for the average infected wound. From a study of its properties, it seemed possible that azochloramid might be such an antiseptic.

Seventy-one infected wounds in a series of sixty-eight unselected cases were treated with azochloramid. Two preparations were used, azochloramid in triacetin and azochloramid in saline. Azochloramid in triacetin 1:500 is yellow in color, has a barely perceptible odor, and an oily consistency. Azochloramid in saline 1:3300 is clear and practically odorless. Azochloramid in triacetin was

used alone in sixty-one of the seventy-one wounds, azochloramid in saline alone in six, and both forms alternately in four.

The wounds are grouped under three main headings because of similarities in the respective methods of treatment (Table I). Under the first heading, superficial wounds, are included those which are wide-open and shallow such as granulating postoperative wounds, burns, etc. Under the second heading, deep open wounds, are included those which have penetrated at least the subcutaneous layer such as postoperative abdominal wound infections, incised abscesses, etc. The pockets and sinuses are considered under a third heading because of their small opening. Among these are the empyemas.

Method

The method of application was simplified as much as possible. The pockets and sinuses were merely injected with azochloramid in triacetin and their outlets covered with vaseline gauze. The deep open wounds were treated by packing the infected cavities with gauze saturated with the solution and also a covering with vaseline gauze. The superficial wounds were treated similarly by applying saturated gauze to the involved area and covering with either vaseline gauze, cellophane, or oiled paper. When azochloramid in saline was used, the solution was injected at regular intervals through rubber tubes fixed in the dressing.

The dressings were changed daily in all three groups except in two cases of extensive cellulitis. Because of pain in these cases, the dressings were left in place for longer periods and moistened at intervals with the azochloramid in triacetin. The duration of treatment in sixty-nine of the seventy-one wounds varied from two to twenty-six days with an average of eight. In two cases the dura-

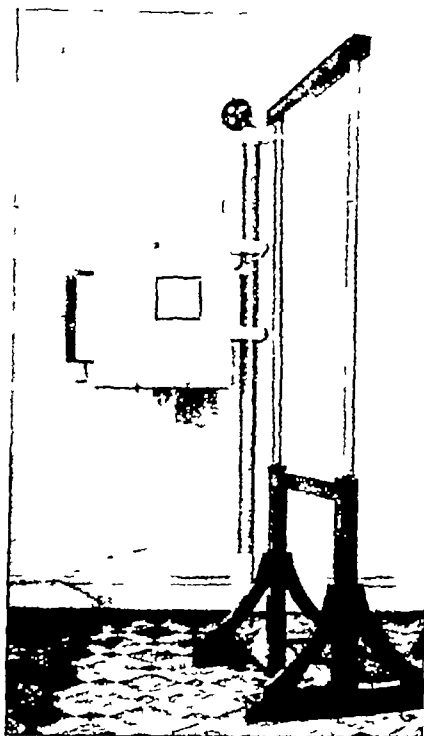


Fig 2

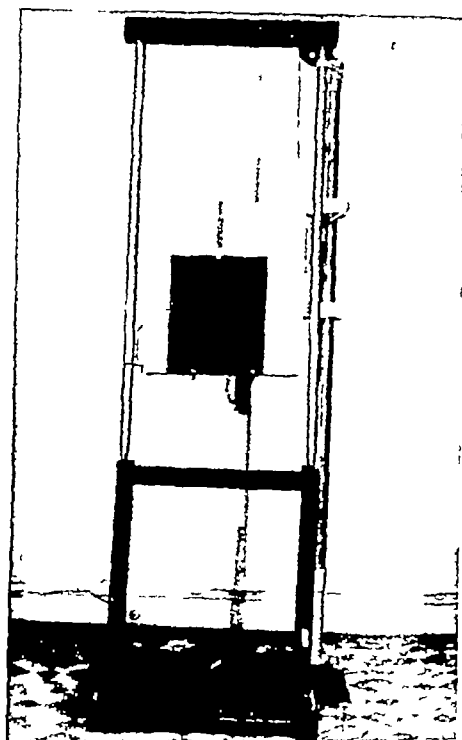


Fig 3

cassette holder (Fig 3) Two small adjustable brackets can be released from the bottom of the cabinet, to support the cassette, while the top is held in place by a spring catch

A special wire marker in the form of a square five by five inches, with an attached handle, is used by the operator during fluoroscopy, to mark the skin of the patient, in order to indicate the exact area to be x-rayed

Advantages

- 1 Shifting the cassette is eliminated

- 2 The apparatus is automatically operated at a distance

- 3 The interval between each exposure is shortened

- 4 The serialograph can be used as a cassette holder

- 5 Due to the counterbalance, the entire cabinet can easily be raised and lowered

983 PARK AVE.

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MEDICAL RADIO BROADCASTS

The Medical Information Bureau of the New York Academy of Medicine announces the following broadcasts from Station WABC and the Columbia Broadcasting System network

Thursday, Dec 3, 1 30 P M—*Speaker* Dr Conrad Berens, Eye Surgeon and

Ophthalmologist at N Y Eye and Ear Hospital *Subject* "The Story of Vision"

Thursday, Dec 10, 1 30 P M—*Speaker* Dr John Douglas, Attending Surgeon at St Lukes Hospital *Subject* "What Safeguards Your Operation"

"Although His Highness is in touch with specialist medical advisers in this country,

his health remains good, and his spirits excellent."—*Indian Paper*

thighs in which one thigh was treated with azochloramid in triacetin and the other by Dakin's technic. At the end of four days, the side treated with azochloramid showed beginning epithelization and a satisfactory granulating surface while the Dakin's treated side still showed no evidence of healing.

The other was a case of pneumococcus Type I lobar pneumonia with blood stream infection. The patient developed eight subcutaneous abscesses where clysis needles had been inserted in the thighs. The abscesses were opened and treated—three with azochloramid in triacetin, two by Dakin's technic, and three were merely covered with vaseline gauze. Within twenty-four hours, the abscesses treated with azochloramid were the cleanest and driest, the Dakin's next, and the controls last. Before treatment, cultures of all eight abscesses yielded pneumococcus Type I, five in pure culture and three mixed. After three days of treatment, cultures showed a decrease in pneumococci in all three of the azochloramid treated abscesses, no change in the two treated by Dakin's technic, and in the control group an increase in pneumococci in one and a decrease in the other two. Both of these last two, however, showed contamination.

In thirteen cases, azochloramid in triacetin and Dakin's technic were used alternately. The wounds treated by Dakin's technic were more prone to bleed, possibly because the necrotic tissue separated more completely. While there was apparently little or no solvent action on necrotic tissue by azochloramid, the granulations appeared relatively early with a tendency for the necrotic tissue to separate in a mass. (This tendency has also been noted by Kennedy³). Under treatment with Dakin's solution, however, the necrotic tissue readily dissolved and became friable.

Mild burning sensations upon application of azochloramid were noted in six cases. Azochloramid in triacetin was used in four of these and azochloramid in saline in two. In none was it necessary to discontinue treatment. Irritation about the wound was observed in five instances possibly due to inadequate protection of the skin with vaseline gauze. Two cases presented a somewhat generalized

dermatitis after prolonged use of azochloramid in triacetin on extensive areas. In both of these cases the dermatitis disappeared promptly upon discontinuing treatment, and in one reappeared when the azochloramid was reapplied.

In one case treatment was unusually prolonged. The patient, a girl of seventeen, developed a deep abdominal sinus postoperatively which was injected with azochloramid in triacetin one to three times daily for one hundred nineteen out of one hundred forty-six days. Temporary clinical improvement was noted after every series of injections though the sinus itself never closed the patient eventually dying.

Comment

The most satisfactory use for azochloramid in triacetin is in the treatment of infected subcutaneous pockets. The solution need merely be injected daily in most cases. Counter drainage is seldom necessary and healing is unusually rapid. In other postoperative wound infections, the results are equally satisfactory but infected cavities must be packed with gauze saturated with the antiseptic.

When injecting cavities and sinuses containing free pus with azochloramid in triacetin, it was noted that the pus floated off at the top leaving the heavier triacetin solution at the bottom. This may partially explain its unusual effectiveness in this type of wound.

In a certain number of cases a superficial film of necrosis appeared on the granulating surface after applications of azochloramid in triacetin. For this reason where skin grafting is contemplated it is better to use azochloramid in saline before grafting.

The ordinary principles of surgery must be observed with azochloramid as with other antiseptics. The infection should be well-localized, drainage complete, and the part immobilized if necessary. Azochloramid in triacetin, however, did appear to make counter drainage unnecessary in certain cases.

Azochloramid should be applied so that it comes into contact with every part of the infected wound surface.

The triacetin solution should be reapplied daily to keep it at full strength.

Sensations of burning may occur in

tion was one hundred thirty-three days in one and forty-two in the other

Observations

The effect of azochloramid in triacetin on purulent discharge was best observed in deep open cavities and subcutaneous pockets where the solution stayed in contact with all parts of the wound. The pus disappeared rapidly in nearly all instances. Where abscess cavities had been packed with gauze saturated with azo-

TABLE I—TYPES OF WOUNDS TREATED

<i>I Superficial Wounds</i>	
Postoperative	8
Burns	4
Ulcers	4
Cellulitis	2
<i>II Deep Open Wounds</i>	
Postoperative	16
Abscesses	9
Osteomyelitis	5
<i>III Pockets and Sinuses</i>	
Postoperative	16
Miscellaneous	4
Empyema	3
<i>Total</i>	<i>71</i>

TABLE II—WOUND CULTURES BEFORE TREATMENT

Staphylococcus (pure)	24
Staph and Strep (mixed)	17
Miscellaneous (mixed)	12
Miscellaneous (pure)	9
No growth	4
<i>Total</i>	<i>66</i>

TABLE III—TYPES OF WOUNDS UNIMPROVED BACTERIOLOGICALLY

Chronic osteomyelitis	6
Multiple sinuses	5
Spreading infections	3
Persistent necrosis	2
Treatment insufficient	2
Severe diabetes	1
Unexplained	3
<i>Total</i>	<i>22</i>

chloramid in triacetin, the interior was found clean and dry on removal of the gauze. The drying effect was so marked that a satisfactory loop of fluid for bacterial counts could no longer be obtained after one or two applications.

In a few instances the discharge did not diminish. Two were cases of chronic osteomyelitis. In a third the infection was not sufficiently well-localized and in a fourth the preliminary surgery was inadequate. In one case the purulent discharge increased while under treatment.

The saline solution of azochloramid was preferred to the triacetin in chronic empyema because it was considered less irritating. In each of three cases so treated, the discharge cleared up rapidly. In one of these, a bronchial fistula which developed during Dakin's irrigations closed subsequently during irrigations with azochloramid in saline. The saline solution was preferred also on wounds of the face such as extensive burns which were being prepared for skin grafting and where either Dakin's solution or azochloramid in triacetin would be too irritating.

The temperature was normal before and during treatment in forty-two of the sixty-eight cases. Of the remaining twenty-six, it was elevated throughout in fifteen because of some complication, in nine, the temperature fell to normal following drainage, and in two, the azochloramid itself appeared responsible for the fall in temperature. In one of these it rose after discontinuing treatment and fell again after treatment was resumed.

Table II shows the organisms present in sixty-six wounds on the first day of treatment. Bacteriological data were sufficient to show the results of treatment in fifty-two of the wounds. In thirty of these, there was a decrease in the numbers or types of bacteria, in eighteen there was no change, and in four an increase. Negative cultures were obtained in twelve wounds, in three of which they became positive again when treatment was discontinued. In ten of the mixed infections cultures became negative for one or more of the organisms during treatment. The remaining eight cultures showed a decrease in the number of organisms.

Table III shows the types of wounds in which treatment was classed as unsatisfactory from a bacteriological standpoint. It is probable that in most of these wounds the azochloramid did not come into contact with all parts of the infected area. This was apparently due to the type of the wound, incomplete drainage or inadequate technic.

In the treatment of fifteen cases azochloramid in triacetin and Dakin's technic were both used. Two cases deserve special notice because more than one lesion was present at the same time. One was a case of third degree burn of both

PYOPERITONEUM

CHARLES H. GOODRICH, M.D., F.A.C.S., Brooklyn

Pyoperitoneum is a label or index of conditions observed rather than a diagnosis. Today every diagnosis should include reference to the basic cause of conditions found. It is true that pyoperitoneum fulfills the dictionary definitions of "clinical diagnosis" even though we have made no differential diagnosis and no complete pathological diagnosis and still entertain more than one etiological concept as a tentative diagnosis. Thus far we have been unsuccessful in determining the basic lesion through diagnosis by exclusion. Cured of his acute disease this man remains an interesting scientific problem. Solution of this problem might help others.

Case Report

L. F., Italian, fifty-one, laborer, appeared at our office on May 21, 1935, ill for six months. At first there had been pain in the left hypochondrium, shifting after two months to the epigastrium. No pain for three months. This pain was most severe from 8 P.M. to 2 A.M. Legs swelled at first but had not for the past four months. Pyorrhea was severe four years ago but all teeth were extracted with a resultant improvement in health. Abdomen became swollen soon after beginning of his illness and medicines at first brought improvement. April 23, 1935, a subumbilical paracentesis evacuated three gallons of light brown fluid. The physician who did the paracentesis said his "liver was sick."

The patient had always smoked—pipe, cigars, and cigarettes—and alcohol was restricted to a little wine with meals. The micturition was six times during day, and twice at night. Bowels were usually somewhat constipated. There was marked general weakness. His normal weight was about 175 pounds—one year ago.

Examination: Pale, anxious facies, hollow cheeks, gaunt frame, weight 130 pounds. Hoarse voice. Moderate anemia. Slight icteroid tinge of sclera, no enlargement of glands of the neck. Thyroid negative. Diffuse leukoplakia of palate and tongue and inside of both cheeks.

The heart was in normal position, very slight hemic murmur at the apex, not transmitted. Lungs negative anteriorly, chest wall very thin, bones stand out boldly. Lungs negative posteriorly. Heart rate 100, Blood pressure 108/76.

A generalized collection of fluid was in abdominal cavity which fills the lower two thirds of cavity. There is a typical shifting dullness or flatness when patient turns on side. No masses are felt, there is no tenderness and no swelling of ankles.

Rectal: One external hemorrhoid. Lower four inches of rectum is clear and no tumefaction of any kind can be felt. Prostate is normal in size and not tender.

Patient was referred to the Methodist Episcopal hospital and admitted on May 27. The tentative diagnoses were: Malignancy of liver or cirrhosis of liver with ascites, generalized malignancy of the peritoneal cavity, tuberculous peritonitis, chronic nephritis with cardiovascular syndrome.

Temperature on admission was 100, pulse 90, blood pressure 100/50. Blood examination showed the red blood cell count 3,320,000, leukocytes, 10,600, hemoglobin, fifty-eight per cent, polys, seventy-two per cent, lymphocytes, twenty-eight per cent. Coagulation time was 3 minutes 20 seconds, bleeding time, 2 minutes 45 seconds, Wassermann and Kahn, both negative. The icteric index showed the blood to be badly hemolyzed. Van den Bergh, 0.3 mgm.

Blood chemistry: Urea nitrogen twenty-four, sugar, eighty-one, creatinine, 11, cholesterol, 119 mgm.

Urine showed faint trace of albumen, no sugar, large number of bacteria, few epithelial cells, ten-twelve white blood cells and a few granular casts.

Pulse rose gradually for four days and on the fourth day patient felt sicker and appeared weaker. There was increased sense of fullness in the abdomen and more ascites. A suprapubic paracentesis was therefore done after catheterization, and we were astonished to find thick, greenish yellow, malodorous pus flowing through the cannula into the pail. The amount collected was one gallon and one quart. Both following the examination in the office and

abrasions, superficial ulcers and burns, and where islands are left in third degree burns

Irritation of the skin about the wound edges may be prevented by the application of ointment or vaseline gauze

In the unusual event of a dermatitis which is more or less generalized, the azochloramid should be discontinued

Conclusions

Azochloramid, particularly azochloramid in triacetin, because of its efficacy, simplicity of application, and low toxicity, deserves a prominent place in the treat-

ment of infected wounds

Its greatest value appears to be in the treatment of postoperative infections. Proper drainage should be established and the solution made to come into contact with all parts of the infected area

Azochloramid compares favorably with Dakin's solution in most instances and the technic of application is much simpler

713 E. GENESEE ST

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SCIENCE CALLED A "BLIND SAMSON"

An attack on science for its failure to solve the problem of human relations was made in a recent address by Dr Iago Galdston, executive secretary of the Medical Information Bureau of the New York Academy of Medicine, at the New York Museum of Science and Industry, 30 Rockefeller Plaza.

"I charge that science has dissipated, laid ruthless waste—if not maliciously, at least ignorantly—to the cultural and moral heritage of mankind, and left it spiritually bankrupt," Dr Galdston said. "I prognosticate, holding to my mind's eye that gazing globe, past history, wherein alone one can see the future pictured, that unless science amends its faults it will, like blind Samson, bring down the palace upon itself

to its own destruction and the irreparable disadvantage of humanity"

Dr Galdston said he was not attacking the material betterment that science had brought about, or the scientific method, but the "conceit" of those who looked upon science as the only key to life. He pointed out that it was science which had made the Four Horsemen of the Apocalypse virtual realities, by developing giant bombers capable of destruction of cities like New York, Berlin and London

"At rock bottom science is a moral, devoid of ethics and not concerned with the good, the true or the beautiful of Christ or Socrates," Dr Galdston said. "However, I look for science to become scientia and to develop a concern for man as a spiritual being"

PESTIFEROUS VIRUS DRAGGED FROM ITS LAIR

The invisible filterable viruses, rated among man's most dangerous enemies, which produce a wide range of disabling or fatal diseases such as the common cold, influenza, yellow fever and infantile paralysis, can at last be isolated in pure, concentrated form by means of a new powerful apparatus devised at the laboratories of the International Health Division of the Rockefeller Foundation

The obtaining for the first time of viruses in pure concentration will, it is expected, make possible more thorough investigations of their disease-producing properties which, in turn, may lead to better means for counteracting their deadly effects

The new virus separator, built on the principle of the cream separator, is described in detail in the *Journal of Experi-*

mental Medicine, official publication of the Rockefeller Institute for Medical Research, by Dr Johannes H Bauer and Dr Edward G Pickels. The journal is edited by Drs Simon Flexner, Peyton Rous and Herbert S Gasser

The virus separator is a highspeed centrifuge enclosed in a vacuum which whirls the virus-containing fluids taken from diseased animals and humans at the terrific speed of 30,000 revolutions per minute, representing a maximum centrifugal force in the fluid of 95,000 times gravity

This enormous force causes the invisible viruses suspended in the fluid to be deposited out in the form of a sediment, which, in animal experiments, has been found to be much more potent than the original fluid

½ oz in eggnog three times a day and digitals and strychnine in fairly full doses. Cascara was the only laxative used. Quinine, Basham's Mixture, and Zambelletti's Iron and Arsenic injections were given for several weeks. Full diet given after closure of fecal fistula.

Flat x-ray plates taken May 27 showed little beyond the fact that there was fluid in the abdominal cavity and a suspicion in the first flat plate of enlargement of the liver, not observed later. There were many hypertrophic arthritic changes in the vertebral column. The second film (June 24) was reported as "resolving ascites."

When the patient was discharged from the hospital his weight was 103. His wound was thereafter dressed weekly and was closed October 24. Very slow! Patient then weighed 144 pounds. He had a healthy appetite, went about as usual, and had not attempted to work. Bowels moved regularly without laxative. He has a fullness in the lower abdomen but no fluid wave can be elicited. There is no hernia. X-ray plates were taken of the chest and abdomen on October 21 with the following findings:

Abdomen No masses. No evidence of fluid. Especially marked hausturation of splenic flexure, significance? Essentially negative.

Chest No evidence of Koch infection. No pathological changes. Essentially negative.

In view of the rather astonishing recovery of this patient and the fact that there was accumulated so much pus in the general cavity of the peritoneum without gaseous distension, tenderness, masses, rigidity or the systemic evidences of acute sepsis, we cannot make a diagnosis of generalized pyogenic peritonitis. Malignancy and cirrhosis of the liver can be eliminated by laboratory findings and clinical course. The diagnosis narrows down to tuberculous peritonitis or serous ascites secondarily infected at the primary paracentesis one month before we saw this patient, or some suppurative lesion of the gastrointestinal tract, with generalized pus accumulation after rupture. The latter seems incredible because of the clinical history and the find-

ings at operation. Tuberculosis should be eliminated by the type and bacteriology of pus, the gross pathological anatomy observed at operations, and the prompt healing of the fecal fistula.

Dr Thomas B. Spence saw this case with me in consultation when the patient was at his worst and advised continuing the conservative surgical management which we had instituted. We believed that immediate radical operation searching for the basic cause of his trouble would undoubtedly have killed this man.

Semi-monthly or monthly observations of this patient have continued to date and he has constantly gained in weight and vigor. In November he began light work and since January he has done full work on fortunate days. His weight is now 172 pounds. He has had no symptoms of acute or chronic disease other than his glossal and buccal leukoplakia, which is much improved, and an incisional hernia.

Roentgenological examination on January 16 failed to reveal any abnormality in form or function of the gastrointestinal tract, except a barium filled appendix. He feels well, has no pain, gains weight constantly, and his essential functions work competently and amiably.

A complete accurate diagnosis remains unrecorded. When his hernia is repaired indications of the primary lesion may be exposed.

Addendum

On June 23, 1936, the ventral hernia was repaired. During the operation we discovered that this patient had had a tuberculous peritonitis, evidences of which were scattered over the summit of his bladder and the parietal peritoneum of the abdominal cavity. There were a few milary tubercles which were shriveled, over the cecum. The appendix was not easily brought to view and therefore left alone. He endured the operation and hospitalization very well and at this writing (August 1, 1936) seems to be in robust health.

280 PARK PLACE

Discussion

DR. HAROLD K. BELL, *Brooklyn*—This case report is very interesting and unusual. The Doctor deserves our congratulations on this patient's complete recovery accomplished by simple conservative surgical measures. Incision, drainage, and well-directed aftercare resulted in a cured patient. I quite agree that elaborate exploration at the primary operation might have

discovered the underlying pathology but would have abbreviated the report.

The ability of the peritoneum to take care of itself and the viscera which it surrounds and protects is appreciated today better than ever before and is well exemplified in this case. The bacteriological report showed almost a pure culture of a variety of micro-organisms. Either a

this simple operative procedure, the patient became exceedingly weak. Following paracentesis a chill supervened, then gradual improvement with receding pulse and temperature. Blood pressure was consistently low, 80/48 to 100/60.

The patient was treated conservatively for four days after paracentesis when it was determined best to make a conservative opening for drainage centered at the site of paracentesis. Leukocyte count was then 12,100, fifty-six per cent band forms. The account of the operation is as follows:

1 Under two per cent novocain local anesthesia, and after catheterization, a four inch low median abdominal incision was made just above the pubes.

2 When the thickened peritoneum was punctured, out flowed eight oz. of foul pus, some thin and some thick. A definite abscessed tract led the examining finger downward into the true pelvis. Pockets extended to the north, southeast, and to the southwest from the main section of this abscessed tract.

3 With the use of the suction, these communications were emptied as thoroughly as possible. A large soft tube was placed in the pelvis and a smaller soft tube was placed into the apparent communications of the cavity of the peritoneum. Suction drainage was established with the large tube.

4 Sutures closed the muscles and skin except where the tubes emerged. Chromic used in the muscle and linen to the skin.

Note The inflammatory process seemed to be that due to pyogenic organisms. Nothing in the tissues observed or the pus which was evacuated resembled tuberculous or hemorrhagic type of lesion, nor did there appear to be anything that suggested actual communication with the gastrointestinal tract.

The pathological report of the pus follows:

The specimen is thick, homogenous fluid of green color, and has a terrific odor, strongly fecal. A smear direct from the fluid shows it to be alive with organisms of all kinds, gram plus cocci and bacilli and gram minus cocci and bacilli. No pus cells are seen. Specimen seems to be almost pure culture of micro-organisms.

Culture and stained smears corroborated this view. No preponderant bacterium.

There followed a period of improvement and then a relapse distinguished by a lowering of the leukocyte count to 5,000 with forty-two per cent polys, fifty-eight per cent immature forms. R.b.c showed some achromia and some anisocytosis. At this time the hemoglobin was thirty-six per cent and red blood cells 1,940,000. Patient's resistance was reduced alarmingly. As drainage had ceased from our wound, it seemed wise to assume that the patient was not discharging

the pus which was re-forming and on June 26, under novocain anesthesia, the drain opening in the abdominal wall was enlarged and deepened by gentle blunt dissection. A large-sized soft tube was introduced into the pelvis and sewed in place.

On the third day after this procedure, patient began to have a discoloration of discharge which was suspicious. On the fourth day there was frank fecal discharge with much less pus. Tube was removed very shortly and several irrigations per day instituted and eleven days after its inception there was a complete closing of the fecal fistula. The patient, however, seemed more ill again and was developing a mass in the right lower quadrant. This gradually increased in tenderness and was incised under novocain July 16 through an oblique incision, the external oblique being split in the line of its fibers, pus being found just beneath and among the internal oblique fibers and the space beneath. The general cavity of the peritoneum seemed unopened. Six ounces of pus were evacuated. Two large soft rubber tubes were sewed in place. No sutures. Culture showed short gram negative bacilli, also a few very large gram positive bacilli.

By this time the patient was a pitiful collection of bones arranged in an orderly manner with wrinkled skin covering and a pallor that was alarming although the red blood cells were 2,770,000 and hemoglobin forty-seven per cent. His Schilling count showed forty-four per cent unfilemented forms of leukocytes with a total of only 6,200 and a polymorphonuclear count of fifty-six per cent. We had frequent leukocyte and Schilling counts and every variety of abnormal form of leukocytes were present in some degree. The staphs increased a little at this point and from this point on. There was a definite improvement on August 2, forty-two per cent filamented forms were present, polys sixty-one per cent, and staphs nineteen per cent.

On August 10, the hemoglobin showed a still further improvement (53%) and the Schilling count had improved. The patient's wound was beginning to look quite clean.

General management Ten days before third operation we let him out of bed and immediately thereafter he began to use the solarium daily. He ate reasonably well, bowels behaved remarkably well after the first two or three weeks. His morale was very excellent at all times especially after the third operation and he was entirely cooperative. Several supportive measures were used. Three Extralin capsules were given three times a day. Spiritus frumenti

JAUNDICE AND ANEMIA WITH RECOVERY IN SUCCESSIVE NEWBORN SIBLINGS

ROSE F. NETTER, M.D., *New York City*

We thought it interesting to add this group of cases to the literature because of the clear familial incidence of the syndrome of jaundice and anemia, associated with enlargement of the liver and spleen in the newborn, and because of the successful outcome following supportive measures, in the form of transfusions. So far, our cases have been followed for forty-four months, thirty months, and seven months respectively and no sequelæ or recurrences have occurred.

The previous obstetrical history of this mother was as follows:

In 1925 she gave birth to a normal, full term infant who died, at the age of one year of pneumonia, following measles. In 1926 she was delivered (breech extraction) of a normal male child now living and well. In 1928 she gave birth to another child who became jaundiced on the second, and died on the third day. The liver and spleen were enlarged. In 1930 she gave birth to an infant who survived only ten hours. There was no jaundice or hepatosplenomegaly. In 1931 the mother suffered a spontaneous abortion at three months. The cause was undetermined.

Her subsequent babies have been delivered at the New York Infirmary for Women and Children. These we have been able to see at an early stage through the courtesy of the Obstetric Department, whom we wish to thank for their cooperation.

On July 21, 1932 this mother, then twenty-eight years old, was delivered of a jaundiced baby boy weighing six pounds, seven ounces. The mother's Wassermann was negative, and her blood count was normal—4,600,000 r.b.c. with eighty per cent hb, 6500 w.b.c., sixty-six per cent polys, and 34 per cent lymphs. The baby's blood count was r.b.c. 2,500,000, hb fifty-three per cent, w.b.c. 13,700, polys sixty-seven per cent, lymphs twenty-three per cent, eosinophiles three per cent, basophiles two per cent, transitionals five per cent. Anisocytosis, basophilia, and achromasia were present. There were many normoblasts, microblasts, and megaloblasts. The coagulation time was four minutes. The reticulocyte count was fifty per cent. Thirty-

five c.c. of blood and 100 c.c. of saline were given subcutaneously. The next day 125 c.c. more of saline were injected.

There was a difference of opinion as to the size of the liver and spleen, and x-ray showed that the liver was not enlarged.

On the sixth day the hemoglobin had fallen to 35 per cent, the r.b.c. were 2,400,000, the total and differential white count were about as before. There was a trace of bile in the urine. Liver and spleen were enlarged. A transfusion of 100 c.c. was given. Two days later, the hemoglobin had risen to fifty-eight per cent, and the next day it was seventy-eight per cent. Reticulocytes were now 65 per cent. Platelets were normal, the bleeding time was two minutes. There was general improvement and a decrease in the size of the liver and spleen.

On August 2, six days following the first transfusion, another one of 120 c.c. was given. The next day the icteric index was still 55.5, the Van den Bergh was delayed direct. On August 5, the hb had risen to ninety per cent although the red count was still only 2,780,000. When the infant was taken home against advice, on the twentieth day, its general condition was good, the jaundice had decreased, the liver and spleen were three and two cm. respectively, below the costal margin.

The child was readmitted September 14, 1933, at the age of fourteen months, for an upper respiratory infection. Its temperature on admission was 102.4° F. A blood count the day after admission, when the temperature was normal, was r.b.c. 5,030,000, hb seventy per cent, w.b.c. 7,600, polys forty-one per cent, lymphs fifty-seven per cent, and transitionals two per cent. Liver and spleen were not palpable. The child was subsequently seen in the clinic on April 30, 1934 (age, 1 year 9 months), February 19, 1935, (age, 2 years 7 months), and April 5 (age 2 years 9 months) each time for an upper respiratory infection. The child was seen for follow-up on October 18, 1935 (age 3 years 3 months) and again on March 12, 1936 (age 3 years 8 months). On none of these occasions was the spleen or liver palpable. The color was good and the child did not appear chronically ill. The mother would not permit a blood count to be done.

well-developed immunity or attenuated strains of bacteria, or both, must have been active factors in this man's reaction to his infection and to his ultimate recovery. There was more or less complete absence of signs and symptoms of localized intra-abdominal inflammation or the recognized systemic reaction to acute sepsis. The accumulation of pus in the intercommunicating pockets disclosed at the primary operation leads one to conclude that this patient developed multiple abscesses rather than generalized pyogenic peritonitis as such. The patient's defensive mechanism is

manifested by his localization of the abscess in the abdominal wall and also in the complete closure of his fecal fistula in eleven days. Subsequent x-rays visualized the appendix and proved that it had not sloughed off as the result of acute inflammation. Nevertheless a small slow gastrointestinal perforation of some nature would seem to be a logical guess as to the underlying etiology, whether it resulted from organic intestinal pathology or from perforation at the time of his original paracentesis, we do not know.

ENLISTING THE CHURCHES IN THE CANCER CRUSADE

It has been discovered by the New York State Branch of the American Society for the Control of Cancer that church groups offer a splendid field for education in cancer control. At the present time a concentrated effort is being made to educate the people of Erie and Monroe counties in this way, and the work is reported quite successful. Audiences range from a dozen to hundreds. It all began when a Protestant church "brotherhood" found itself without a speaker for a dinner meeting, and appealed to the State Branch. One was provided, and he aroused such interest that more talks were requested, and four have been given, two for men, one for women, and one for a mixed group. Next a Holy Name Society became interested, and several talks were given.

As related by Dr Louis C Kress, in a paper read before the directors of the ASCC, it was then decided to call upon the clergymen, and they reacted favorably. The plan for meetings was outlined and the pastor appointed a committee to make a house-to-house canvass in that community, inviting not only the members of the church, but every adult regardless of religion. Several good meetings were arranged in this way. Many of the Church groups have newspaper affiliations and notices of the cancer talks appear for days and weeks in advance.

Last Fall at a meeting of clergymen, one of the younger men, who is in sympathy with lay cancer education, proposed that the clergymen at the meeting allow and arrange for cancer talks to be given at the meetings of their respective church groups. A few of the older men scoffed at the idea and said that it was absurd, but several of the younger men thought well of the idea and offered their co-operation. Now instead of

going to those clergymen and requesting dates for talks, invitations are received from them and many talks have been arranged in this way during the past year.

The policy that has been adopted and is being carried out is to go out and sell the talks to interested groups and to ask for the opportunity to present the cancer problem before their respective groups. The results to date have been gratifying in that at the present time there are from two to five lay talks—to church groups, civic groups and students—given each week.

The material presented at the lay meetings is suited to the groups. The type of talk is determined by the type of audience and by the manner in which the information is received. An endeavor is made to keep on a level with the intelligence of the group and a guide to that is usually obtained from the person who arranges for the talk. The merits of an illustrated talk are obvious, and whenever it is possible to do so, lanterns and screens are used.

In all of the talks are emphasized the general facts concerning cancer, such as—cancer is curable, preventable, not inherited, not contagious or infectious, not a blood disease and not a loathsome disease. The people are encouraged to talk about cancer and especially to broadcast the cures, the failures are usually advertised. The general symptoms of cancer are pointed out, their significance is explained and the people are told what course of procedure to follow when in doubt. They are told that people who are suspicious of their condition should be encouraged to go to their family physician to seek aid and that he in turn will send them to an organized tumor clinic if he sees fit. At the end of the talk, questions are answered and cancer literature is distributed.

Discussion

We see in these cases the salient features of erythroblastic anemia¹ of the newborn. They are

1 Jaundice—which may reach serious proportions, as in icterus gravis neonatorum.
2 Anemia—consisting of low r.b.c. and hemoglobin count, and the presence of many immature forms

3 Enlargement of the liver and spleen

4 Onset at birth or within a few days

5 Familial incidence.

6 Absence of lues or other infection

7 In some cases there is also present a generalized edema of greater or lesser severity

The whole picture is based on a persistence of the fetal state of the hematopoietic system. The first blood formation²⁻⁴ takes place in the blood islands of the yolk sac where the mesenchymal cells become the primitive blood cells. These are differentiated into hemocytoblasts or stem cells from which, after they have migrated into the fetus, develop all subsequent red blood cells. The stem cells are deposited and proliferate in the various organs of the fetus which successively serve as the blood forming centers, namely, the liver, spleen, and bone marrow.

Normally the bone marrow persists as the chief blood-forming organ² after birth. In contrast to this, postmortem examinations on cases of erythroblastosis have shown the liver and spleen replete with active hematopoietic centers⁵⁻⁸—a persistence of the fetal state.

In fetal life the blood contains many immature forms, which in the normal baby practically disappear during the first week after birth⁹. In erythroblastosis, however, they persist in association with a marked anemia¹⁰. Whether the persistence of the blood-forming centers and the presence of a large number of immature cells are a response to the marked anemia, or whether the anemia is a result of the failure of the red blood cells to reach maturity is not known. Is the anemia on the other hand due to an excessive destruction of red blood cells, a theory to which the presence of jaundice lends support, or is the jaundice due to the large number of immature cells in the liver which compress and so obstruct the bile capillaries?

This is the basic pathologic picture, which with different symptoms predominating leads to the division into three groups,¹⁰⁻¹¹ namely—(1) erythroblastic anemia of the newborn as here described, (2) icterus gravis neonatorum^{8,12,13} in which the jaundice is predominant, and (3) universal edema of the newborn, with more or less intense edema as the conspicuous symptom^{8,14}.

The underlying cause of the condition is still being sought. The familial incidence,¹⁰ which is so strikingly brought out in this group, suggests consideration of the following

1 Hereditary factors, i.e., changes innate in the chromosomes. This is demonstrated in the cases quoted by Abt.¹¹

Hilgenberg reports a mother who had several normal children by her first marriage and gave birth to six infants who died of icterus gravis neonatorum by her second marriage. On the other hand, E. V. Gierke reports the case of a father who had a normal daughter by his first marriage and by his second wife two newborn infants who succumbed shortly after birth and were found at autopsy to have suffered with icterus gravis neonatorum.

2 Congenital factors, e.g., conditions in the mother, for instance anemia, toxemia or infection, none of which has been found definitely to be the cause. None of these was present in the mother of our cases, or in the carefully controlled cases reported by Smyth.¹¹

An Australian mother had previously given birth to nine infants, the first two children were normal and survived, there was one stillborn premature birth and 6 infants had developed icterus gravis neonatorum and died from 3 to 11 days after birth. A prophylactic attempt to prevent icterus gravis for the infant of the tenth pregnancy consisted of hospitalization of the mother through the entire course of her pregnancy, with extremely careful supervision and regulation of her diet. The mother was perfectly normal during her time of pregnancy. Seven days before labor was due a Caesarian section was performed and a normal female infant was delivered. The mother's tubes were resected and tied. The infant remained normal for twenty-four hours, when it became drowsy and progressively icteric and died 70 hours after birth.

The course and prognosis seem to depend mainly on the initial severity of the condition. Those that recover usually do so in two or three weeks.¹⁰⁻¹¹ There is usually no response to liver or iron therapy. Transfusions although not always successful are the method of choice.

On August 8, 1933 the mother again presented herself at the prenatal clinic. Her hemoglobin was seventy-five per cent and Wassermann negative. She seemed perfectly well. On September 22 she was delivered of a baby girl, who appeared perfectly healthy at birth. The color was good, but slight jaundice developed on the third day. The liver and spleen were palpable. The general condition was good. In view of the familial incidence, it was deemed advisable to discontinue the breast to preclude a maternal source as the etiological factor. The condition continued in spite of this. The blood count was r b c 2,180,000, hb fifty-six per cent, w b c 19,800. There were anisocytosis, poikilocytosis, stippling, and polychromatophilia. The bleeding time was five minutes and the clotting time four minutes. There were immature forms (3 per cent). There was no significant change in the blood count by the thirteenth day, when the child was taken home against advice. At this time the spleen was about three cm below the costal margin. The general condition was good.

The child was readmitted on October 26, at the age of five weeks, with a history of jaundice, but none was apparent on admission. The mother also stated that the stools had been white for one day. The baby passed one white stool of normal consistency on the evening of admission, but all subsequent movements were colored. Unfortunately the white stool was not subjected to laboratory examination, but there was no jaundice and the urine contained no bile or urobilin at this time.

The blood count was r b c 2,810,000, hb forty per cent, w b c 9,900, polys forty-nine per cent, lymphos forty-nine per cent, eosinophiles two per cent. The liver was two cm and the spleen three cm below the costal margin. Wassermann was negative. One week later (Nov 2) a transfusion of 100 c c was given. The following day the blood count rose to r b c 5,300,000, and hb sixty per cent. Following a slight initial drop, a few days after the transfusion, the blood count became steady, and when the baby was discharged on November 21, four weeks after readmission, it was r b c 4,610,000, hb sixty-three per cent, w b c 9,100, polys fifty-eight per cent, lymphos forty per cent, eosinophiles two per cent. There were still slight anisocytosis and very slight chromatophilia.

On February 28, 1934 the child was brought to clinic for check-up. It was then five months old. The blood count was hemoglobin seventy-seven per cent, r b c 4,640,000, showing slight anisocytosis and central pallor. On October 23, (13 months) another

check-up showed seventy-eight per cent hemoglobin, 4,530,000 r b c, normal in appearance. The child was seen on February 19, 1935 (17 months) for an upper respiratory infection. On October 18, (2 years 1 month) and again on March 12, 1936 (2 years 6 months) it was seen for follow-up. The mother would not permit another blood count. The color was good. The spleen was not felt.

A third case is G M, born August 11, 1935. Jaundice developed the following day. The blood count was r b c 4,010,000, hb 126 per cent, w b c 22,600, polys seventy-one per cent, lymphos twenty per cent. There were nine premyelocytes, and chromatophilia, aniso- and poikilocytosis. The platelets were 448,600. The bleeding time was one minute, coagulation time one minute. The liver was five cm below the costal margin and the spleen was enlarged. The child was put on iron, calcium, and viosterol. In view of these findings together with the family history, a transfusion of forty c c was given in an attempt to ward off the profound anemia seen in the preceding infants. Nevertheless, daily blood counts showed that the red and hemoglobin counts were falling progressively. On August 17, six days after birth, they were r b c 2,530,000, hb seventy per cent, w b c 12,100, fifty-two per cent polys, thirty-nine per cent lymphos, three per cent monos, two per cent eosinophiles, four premyelocytes. There were slight aniso- and poikilocytosis and slight chromatophilia. A transfusion of fifty-five c.c. was given. (The iron was discontinued). The following day, the red cell count was 3,410,000 with seventy-five per cent hb. On August 20, the hb had reached eighty-nine per cent, but for the next ten days there was a progressive drop to forty-five per cent hb and 1,890,000 r b c. A transfusion of seventy-five c c brought the r b c back to 3,030,000 and the hb to sixty-eight per cent. After this it held its own fairly well until the baby was taken home against advice on September 20, forty days after birth. It had had no jaundice since the tenth day. Two days before discharge the icteric index was 3.4. The fragility test was, Patient 0.46 to 0.38, control 0.46 to 0.40.

A month later the child was seen in the clinic. The liver and spleen were not felt. Color was good. The blood count was r b c 4,670,000, hb eighty per cent, w b c 18,500, polys twenty-eight per cent, lymphos sixty-eight per cent, monos, one per cent, eosinophiles three per cent. The red cells appeared normal. The baby had gained three pounds. On March 12, at the age of seven months, the child appeared perfectly healthy.

NEPHRITIC SYNDROMES CAUSED BY INDUSTRIAL POISONING WITH CARBON TETRACHLORIDE

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The mention of nephritic conditions caused by carbon tetrachloride poisoning is rare. The texts on toxicology make no definite mention of the renal manifestations of carbon tetrachloride poisoning and confine themselves to the description of symptoms arising from involvement of the central nervous system, lungs, the gastrointestinal tract, and liver. But very few cases have been reported stressing the renal involvement and these have been due to the inhalation of carbon tetrachloride fumes. Our interest in the subject was aroused by two cases of carbon tetrachloride poisoning following the inhalation of fumes from industrial cleaning fluids. One case presented a picture of chemical uremia as is seen in the necrotizing nephrosis of bichloride of mercury poisoning. The other case was more in the nature of an acute nephritis.

Technically, carbon tetrachloride is a colorless, transparent liquid very much like chloroform. It is said to be more toxic than chloroform. It is insoluble in water but is miscible with benzene, alcohol, and chloroform. It is soluble in all fixed and volatile oils. It is volatile at ordinary temperatures. It is noninflammable and thus favors its use in industry where it is used as a solvent for fats and gums, as a dry cleaner, to remove ink from stencils, to clean oil from machinery, and it is used also in fire extinguishers. In medicine it has been in use as a vermifuge in hookworm disease since 1921.

Reports of its toxicity have always accompanied its use. It was said to have been used about 1860 in the treatment of headache, neuralgia, and chorea. It produced ill effects by inhalation and fell into disuse. At the beginning of this century, two cases were reported of poisoning from carbon tetrachloride following shampoos with fluid containing this chemical. One, in the *Lancet*,² (1907) described the case of a woman who fainted during such a shampoo and was ill for

a day with headache and nausea but recovered. The other, in the *J.A.M.A.*,³ (1909) described a fatality from a similar procedure. In 1920, there was a short description⁴ of a case of a young girl who had vomiting and headache after painting golfball molds with a paint containing carbon tetrachloride. After the introduction of carbon tetrachloride as a vermifuge by Hall,⁵ in 1921, there appeared reports of toxic symptoms and even death in certain individuals especially if they were cachectic or alcoholic. Nearly all these suffered from acute gastroenteritis and toxic hepatitis with jaundice. The pathological reports stressed the typical central necrosis of the liver. There were also hemorrhagic areas in the gastrointestinal tract. Phelps and Hu⁶ described suprarenal necrosis which was not confirmed by others. These reports barely mentioned renal involvement. It is interesting to note that of the ten cases described by Lamson, Minot, and Robbins in 1928,⁷ three developed anuria.

Its use in fire extinguishers was reported to have caused poisoning either from the carbon tetrachloride itself⁸ or from the poisonous gases⁹ formed when these fire extinguishers were used in a closed room and high temperatures as would occur in a fire. The industrial use of carbon tetrachloride has given rise to poisoning by contact and by inhalation. Dermatitis has been caused by direct contact of the hands with cleaning fluids containing carbon tetrachloride. Acute poisoning has resulted from the inhalation of carbon tetrachloride fumes. The fluid vaporizes at room temperature and the vapors of carbon tetrachloride are heavier than air.¹⁰ This favors the retention of the fumes in the lower part of work rooms. At room temperature each cubic centimeter of carbon tetrachloride when evaporated yields 257 c.c. of carbon tetrachloride vapor, and 5,000 parts of the vapor per 1,000,000 of air is considered the maximum that may be tolerated even for short periods without

and seem to be mainly supportive¹⁵ Milder cases recover without treatment in two or three weeks. Severe cases are often fatal in spite of transfusions and other supportive measures.

Summary and Conclusions

1 Four cases of jaundice with anemia in successive newborn siblings are presented.

2 The etiologic factors are discussed. In the cases reviewed in the literature, as well as in those presented here, the etiology is still obscure.

3 The value of transfusion is studied. Some moderately severe cases recover with repeated transfusions. The three treated cases presented have recovered, without sequelae or recurrences to date.

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TACKLING SILICOSIS AT ITS SOURCE

Manufacturers who make claims for the efficiency of their dust-control machinery in preventing silicosis are to be given a chance to prove them. The State Department of Labor has established a "field laboratory" in a granite quarry at Letchworth Village in Rockland County. The granite where the tests are to be made is of high silica content and the dust to be created by drilling this rock will show a high percentage of free silica, the most injurious of all dusts when inhaled. Each applicant must furnish and install at the testing field the drills, compressor, piping, and other essential equipment and also furnish the drill operators, compressor engineer, and all other workmen required to operate the drilling equipment and dust control equipment during the test period. The Labor Department will furnish testing engineers and assistants to conduct the test, make the necessary measurements and furnish all testing instruments.

A dispatch from Washington says that development of a mask affording "complete protection" against silicosis, often acquired by workmen engaged in sand-blasting and such work, is announced by the Navy Department. The mask was designed by W. P. Biggs, departmental safety engineer,

and has been tested for several months in navy industrial establishments.

In the Navy Department the mask is used in shot and sandblasting rooms, where there is a heavy concentration of fine dust. There are several masks commercially distributed, but Mr. Biggs said he found them to be of only "semi-protection."

Its development is the result of several years of research by navy experts, Mr. Biggs explained. The interest of officials was aroused when they discovered that seventy-five out of every hundred men applying for work as sandblasters already had silicosis in varying stages of development.

Since the present mask has been developed only men who are in perfect physical condition are engaged. They are submitted to a physical examination every thirty days, and are taken off of the work at any sign of obstruction in the respiratory tract and are put at other jobs.

A new glass also has been worked out by the navy's safety experts which removes one hundred per cent of the ultra-violet rays and seventy-eight to ninety-eight per cent of the infra-red rays, which are injurious to the eyes. It is used in goggles by men engaged in welding and similar work involving the use of brilliant lights.

Dr. W. C. Templer, general surgeon of the Corning Glass Works at Corning, was elected president of the New York State Society of Industrial Medicine at its an-

nual convention in Schenectady on Nov. 5. Dr. J. D. Kaliski, of the workmen's compensation committee of the state Medical Society, was the principal speaker.

November 17 the urine was negative. By November 20 the blood chemistry was normal, icteric index, nine. All tests of renal function were normal.

The important laboratory findings are reported in Table I.

The clinical picture in this case was identical with that of a necrotizing nephrosis due to bichloride of mercury poisoning. In fact, mercury was looked for in the urine and stools, but was absent. We were very much surprised that carbon tetrachloride could cause such a condition and we were engaged in searching the literature when the second case was admitted.

CASE 2 N P, Italian, street cleaner, age forty-nine, married, was admitted to the Long Island College Hospital November 27, 1933, complaining of vomiting, diarrhea, abdominal cramps, and cough with bloody expectoration for ten days. Three days prior to admission he developed shortness of breath. The family history was irrelevant and his past history showed that he had always been in good health. He drank heavily, at least a quart of wine a day for years. His present complaint began November 17 when he was assigned to cleaning stencils. This work was done in rather close quarters indoors and with several other men he cleaned the ink off stencils with a commercial fluid called "Blankrola" (After admission we investigated this fluid and found that it contained carbon tetrachloride in addition to a normal cleaning solvent.) That night he had a headache and dizziness. The next day nausea, vomiting, diarrhea, abdominal cramps, and cough with bloody expectoration developed. These persisted up to the time of admission. Three days prior to admission he became short of breath and was compelled to stay in bed. He had several nose bleeds prior to admission, and did not complain of oliguria at any time.

Physical examination on admission showed a large individual in respiratory distress with definite cyanosis. His nose bled during the

examination. Blood pressure was 180/100. The pupils were regular and reacted to light and the fundi were negative. There was no icterus of the sclerae. The lungs showed subcrepitant râles at both bases. The left border of the heart was in the midclavicular line, fifth intercostal space. The sounds were forceful, the rhythm regular, and there were no murmurs. The abdomen was tense and distended. There was dulness in the flanks but no fluid wave could be elicited. The liver was not definitely felt but liver dulness was percussed three fingers below the costal margin and this area was tender. There was mild sacral edema but no shin edema.

The urine had a specific gravity of 1.010, a trace of albumin, and many red blood cells. Two or three casts per high power field were found. The blood chemistry showed a nitrogen retention. Icteric index was twelve. Hemoglobin was eighty per cent, red cells 4,200,000, white cells 8,000.

Fluids were forced, intravenous glucose and saline were administered. Calcium was given as calcium gluconate $z i t i d$ by mouth and ampule 1 (grs \times) $b i d$ intravenously. Colonic irrigation was given daily and heat was applied continuously to the kidney regions. Vomiting subsided in two days. The urinary output was never below 1,500 c.c. during this critical period. In three days the blood pressure was 160/100, and remained at that level during the remainder of his hospital stay. The cyanosis and pulmonary congestion disappeared in a few days. The abdomen became softer, but the liver remained below the costal margin. The sacral edema disappeared. The urine continued to show a trace of albumin. The sediment at various times during the month of December showed red cells and casts despite the fact that the chemistry reached normal on December 19. The specific gravity of the urine had on several occasions reached 1.022. The important laboratory findings are reported in Table II.

The clinical picture in this case has been that of an acute nephritis. We can-

TABLE II

Blood Chemistry	Nov 28	Dec. 1	Dec. 4	Dec. 9	Dec. 11	Dec. 15	Dec. 19
Sugar	155 mgs.	105 mgs.					
Urea	291 mgs.	268 mgs.	278 mg.	160 mgs.		0.2 mgs.	30 mgs.
Uric acid	7.7 mgs.	12 mgs.	8 mgs.	6 mgs.		2.5 mgs.	2.5 mgs.
Creatinine	10 mgs.	10 mgs.	10 mgs.	3 mgs.		1.8 mgs.	1.5 mgs.
Chlorides	515 mgs.	500 mgs.					
Alkaline reserve	42%	40%					
Calcium	8.6 mgs.	9.3 mgs.				10.8 mgs.	
Phosphorus	11.4 mgs.					4.5 mgs.	
Cholesterol							
Total protein	6.1%						
Serum albumin	3.76%						
Serum globulin	2.31%						
Icteric index	12						

TABLE I

Blood Chemistry	Nov 2	Nov 8	Nov 9	Nov 14	Nov 17	Nov 20
Sugar	125 mgs.	120 mgs.				120 mgs.
Urea	150 mgs.	321 mgs.		195 mgs.	64 2 mgs.	30 mgs.
Uric acid	6 2 mgs.	9 2 mgs.		8 4 mgs.	3 2 mgs.	2 4 mgs.
Creatinine	4 3 mgs.	10 mgs.		6 mgs.	1 7 mgs.	1 5 mgs.
Chlorides	495 mgs.		500 mgs.			
Alkaline reserve	44 3%		25%			50%
Calcium			9 3 mgs.			
Phosphorus			7 5 mgs.			
Cholesterol			139 mgs.			
Total protein			5 33%			
Serum albumin			3 12%			
Serum globulin			2 21%			
Icteric index	30		14			9

ill effects. The acute poisoning from inhalation of carbon tetrachloride is usually manifested by burning of eyes and throat. This is followed by headache and dizziness in a short time. Within the next twenty-four hours epigastric burning, vomiting, and diarrhea set in. Irritation of the lungs gives rise to an acute bronchitis. In mild cases these symptoms may clear up shortly. But in severe cases the gastrointestinal symptoms get worse, the patient becomes jaundiced and lapses into coma. Some few cases develop oliguria and edema. Most of the cases reported have shown dominant manifestations along the gastrointestinal tract, pulmonary tract, and central nervous system. There have been but seven case reports where the renal involvement has been dominant.

We wish to add our two cases to this group.

CASE 1 J M, age thirty, Puerto Rican, entered the Long Island College Hospital November 1, 1933, with a complaint of abdominal cramps, nausea, and vomiting of three days' duration. The family history was negative. The past history revealed that his health was always good, he was married and his wife was in good health. There was no history of venereal disease. He drank and smoked but little. He worked for a steamship line doing odd work about the vessels when they docked. On October 30, he had been assigned to cleaning condensers in a small space on a newly arrived boat. He worked two hours with a cleaning fluid which was routinely used for such purposes. This was the first time that he had worked with it. (We endeavored to find out the nature of the fluid, but the patient was so sick that he was unable to give us this. It was only several weeks after admission that we ascertained that it was carbon tetrachloride cleaning fluid. This information was obtained from the company which employed him.) After he had been working for two

hours he developed a headache, became nauseated, and vomited. He was sent home and the vomiting persisted. Abdominal cramps developed and he was sent to the hospital.

On admission his T P R. was normal. The blood pressure was 120/70. The patient vomited when he attempted to drink anything. The pupils were equal, but somewhat irregular, they reacted to light. He had an icteric tint to the sclera. The lungs were clear, the heart was not enlarged and the sounds were forceful and regular. The abdomen was tight in the upper quadrants and there was some tenderness over the liver area. No edema was present. Knee jerks were active and equal.

On November 2, the following laboratory data were reported:

Urine Specific gravity 1.026, trace of albumin, occasional granular cast, no red blood cells. Blood chemistry revealed nitrogen retention. Blood count showed hemoglobin eighty per cent, white cells 13,400. Icteric index was thirty. Blood Wassermann was negative.

The vomiting continued despite gastric lavage, intravenous saline, and glucose. His urinary output diminished despite a fluid intake of approximately 3,000 to 4,000 c.c. November 5, he passed four ounces of urine, November 6 eight ounces, November 7 eight ounces, and November 8 there was total anuria. The intravenous medication was continued, hot colonic irrigations were given every eight hours, and continuous heat to the kidney regions. The urine on November 7 had a specific gravity of 1.019, there was a faint trace of albumin and no casts. Puffiness of the face was apparent. Coarse rales were heard. Tenderness over the liver persisted. The patient was very drowsy. The blood pressure continued at 120/80. Blood chemistry November 8 and 9 showed increasing nitrogen retention and acidosis. On November 9 blood pressure was 140/80. The patient voided twenty ounces, and thereafter the daily output increased to 156 ounces on November 12. The patient improved rapidly. November 14 the blood pressure was 120/80.

own cases two syndromes can occur. One is that of acute nephritis with red blood cells, casts, and albumin in the urine associated with nitrogen retention and elevation of blood pressure. The other syndrome is more akin to the necrotizing nephrosis such as occurs in bichloride poisoning where the urinary sediment is quite negative, or does not show more than albumin and casts, while there is nitrogen retention. The blood pressure may or may not be elevated.

As to what does happen in the kidneys, it is hard to say anything too definite because of the scarcity of the pathological reports on these kidneys in the human being and the wide variation in opinion as regards experimental findings. Phelps and Hu⁶ in describing the kidneys in their two cases that died after carbon tetrachloride had been administered by mouth as an anthelmintic said that the kidneys were congested. In one of the patients, a child, the capsules showed a few petechial hemorrhages. Microscopically "in the kidney, some of the tubules and the capsular spaces of the glomeruli were distended with bluish or pinkish granules, probably precipitated albuminous material." MacMahon and Weiss¹⁸ describe the case of a man thirty-four years old who drank one ounce of carbon tetrachloride in milk. He was an alcoholic and died in forty-eight hours. He was jaundiced. The liver edge was two fingers below the costal margin. The abdomen was distended and a fluid wave was present. The urine showed a trace of albumin. The NPN was 115 mgs. The outstanding finding was that the total blood volume obtained from the pulmonary artery contained sixty-four per cent fat and that from the upper end of the inferior vena cava contained twenty-five per cent fat. The lungs were edematous and congested. The liver was large and greasy and showed the usual central necrosis. The kidneys weighed 400 gms. They were enlarged, quite firm, and had a smooth, yellowish, red surface. On section the cortex was thickened, yellow, and opaque. The pyramids were clearly defined and congested. Microscopically both the glomerular capsules and tubules contained precipitated albumin. In addition, the tubules contained homogeneous and coarsely granular eosin staining casts

and a few desquamated epithelial cells. When stained for fat, small fat cylinders were visible within the glomerular capillaries and fatty casts were present in the collecting tubules. The cells lining both the convoluted and collecting tubules were filled with small fat droplets. The background for this may have been the fatty alcoholic liver from which fat may have entered the circulation when central necrosis took place in the liver. The fat in these organs which are supplied by the left side of the heart must have gotten through the pulmonary circulation or precipitated from the blood.

Meyer and Pessoa¹⁹ in 1923 described lesions in the kidneys of dogs that had received toxic doses of carbon tetrachloride by mouth. The external surface of the kidneys was not markedly abnormal but microscopically there were many fat droplets in the protoplasm of the epithelial cells of the convoluted tubules and of the loops of Henle. These fat droplets occupied that portion of the cell nearest the lumen and compressed the nucleus against the stroma side. In a few cases there was a small amount of congestion of the glomeruli. In several control animals that did not receive carbon tetrachloride there were only a few fat globules in the renal parenchyma. Meyer and Pessoa stated that the kidney lesions cleared up just as did the central necrosis of the liver. The next year Schultz and Marx²⁰ carried out experiments showing that the amount of stainable lipoids was the same in control dogs as in those receiving carbon tetrachloride and they concluded that definite fatty changes were not produced in the kidneys by carbon tetrachloride.

Gardner²¹ and the Johns Hopkins group in 1925, following the oral administration of carbon tetrachloride in varying doses to dogs, found that evidences of real nephritis appeared no more frequently than would be found in any large series of dogs. Examination of their protocols shows that in dogs killed by massive doses of carbon tetrachloride there was an accumulation of albuminous material around some of the glomerular tufts within Bowman's capsule. Moderate cloudy swelling of the tubular epithelium was present, but no fatty change or necrosis of these cells was found. Two dogs

not say at this time what the previous renal status was in this man or whether he had a previous hypertension but his nephritis has improved and our tests do show good renal function

The first mentioned case of nephritis following carbon tetrachloride poisoning was by Boveri in 1929¹¹ He described the case of a young man twenty-seven years old who worked in a factory using carbon tetrachloride to remove grease from clothes After an exposure for two days in a small chamber the patient developed malaise followed by nausea and vomiting, headache, and dizziness He became anuric and lapsed into semi-coma The essential physical findings were cyanosis, icterus, enlarged liver, and a blood pressure of 145/70 The urine had four grams of albumin, many granular and hyaline casts, and many red blood cells He improved under treatment and a check-up one year later showed good renal function A companion of the patient suffered from nausea, headache, and general malaise but recovered in two days

The next report was by Mauro in 1930¹² Five men were engaged in making an insecticide containing potassium soaps, phenol, and carbon tetrachloride One worker, thirty-six years old, developed dryness of the throat, dry cough, and nausea on the first night In five days he suffered headache, vomiting, tremor, and icterus Oliguria set in and leg edema was noticed Physical examination showed an elevated blood pressure, an enlarged liver, and leg edema The urine was scant, acid in reaction, specific gravity 1.011, albumin 3.5 grams, many granular and hyaline casts, but blood was absent The blood urea was 178 mgs The patient recovered in a few days The second case was a man of fifty-two years, who had a similar picture but edema was absent Another worker was mildly ill

In 1931, Hebert and Phelebon¹³ reported the case of an automobile chauffeur of thirty-four years, who became ill while cleaning the chassis of his car with carbon tetrachloride He began to vomit the next day and in two days oliguria developed An icteric tint was noted There was nitrogen retention and reduction of blood chlorides The patient improved rapidly when given salt by mouth

In 1931-32, Lecornu and Pecker¹⁴ de-

scribed the case of a man who was exposed to fumes of carbon tetrachloride for two hours while extinguishing a fire. That night he had headache and nausea followed by vomiting Anuria set in and there developed nasal bleeding, ecchymoses, and purpura Physical examination showed icterus, mild edema of the face, basal râles, and an enlarged liver The blood pressure was not elevated The urine contained a large amount of albumin There was nitrogen retention The patient died in acute pulmonary edema about ten days after exposure.

In 1932, Pogniez, Pichet, and Koang¹⁵ reported three cases occurring in a dye factory The first case, a man of thirty years old, developed malaise the day after exposure and this was followed by vomiting, diarrhea, oliguria, and generalized edema He was admitted to the hospital in acute pulmonary edema Physical examination showed generalized edema and hypertension The urine was scant, contained a good deal of albumin, and the sediment was negative There was nitrogen retention The patient improved rapidly The second case had a similar onset but died within twenty-four hours of acute pulmonary edema The third case, who had been exposed longer than the other two, had no symptoms of intoxication

At the same time Richet and Couder¹⁶ reported another case in a man forty-one years old who became ill with headache and vomiting after exposure This was followed by oliguria and bloody diarrhea The blood pressure was elevated and there was nitrogen retention He was treated with chlorides and calcium and recovered in ten days

McGuire¹⁷ reported seven cases of poisoning following inhalation of fumes of carbon tetrachloride from vats at a felt manufacturing plant Four of the cases had evidences of kidney irritation and one had an acute nephritis The blood pressure in this case was 182/102 The urine was scant and showed evidence of acute nephritis This case was complicated by a bronchopneumonia There was also a diffuse, blotchy, macular rash over the body Calcium, caffeine, and digitalis were used A check-up four months later showed that the patient was well

From the cases reported and from our

the clinical picture was dominated by renal lesion, one similar to necrotizing nephrosis, the other to acute glomerular nephritis. Review of the literature reveals seven similar case reports.

Treatment consists of administering glucose and calcium, the latter acting apparently as an antidote.

The fact that these cases have been

reported in recent years should serve as a warning of the increasing frequency of poisoning from the industrial use of carbon tetrachloride.

NOTE: Since the acceptance of this article, Dudley²⁴ has described four cases from the Royal Naval Hospital, Chatam, England.

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LEPROSY ON THE WANE

Leprosy is a disease where the fingers, toes, and even the hands or feet sometimes fall off. Now, by a kind of poetic justice, leprosy itself is falling off. On a population basis there is relatively less leprosy in the world today than ten years ago, Dr Victor G Heiser, president of the International Leprosy Association, and an authority on the treatment of the malady, said at the annual meeting of the American Mission to Lepers in New York City.

Statistics on the history of the disease are misleading, he said, since medical science has recently discovered methods to diagnose the malady at very early stages of its development, thus swelling the number of cases on record as compared with a decade ago.

A specific cure for leprosy has been by no means identified, Dr Heiser said, although not long ago it was erroneously heralded to the world that Trepan blue

was a sure cure. Dr Heiser pointed out that Trepan blue, a dye, is helpful in many cases, but often causes a relapse in the patient. He said somewhat better results had been obtained recently with fluorescin, another dye. Recovery has been achieved in some ten per cent of leprosy cases by the use of chaulmoogra oil, he said.

It may be a long time until better remedies are known, Dr Heiser cautioned, and it is the duty of society to the lepers that they be segregated, cared for and trained to support themselves in so far as possible.

"It is true," he declared, "that leprosy is not transmissible in many localities, why, we don't know. For instance, it is transmissible in this country only in four States—Florida, Louisiana, Texas, and California. But in these regions where it is transmissible, it is absolutely unfair to say that segregation has failed."

THE DOCTOR'S DILEMMA

Lives of great men all remind us
Honest men don't have no chance,
For as we work there grow behind us
Larger patches on our pants

On our pants once new and glossy
Now are stripes of different hue,
All because our patients linger
And do not send us what is due.

Let us then be up and doing,
Send us your mite, however small
For when the snows of winter strike us
We won't have no pants at all

Anonymous, *Ill Med Jour*

that received four c.c. of carbon tetrachloride by mouth were killed after a four days' interval. Fat was found in the tubular epithelium. One dog's kidneys were loaded with brassy tubular casts, but there were no glomerular changes. The rest of their animals, however, showed no changes in the kidneys, not even after alcohol was added to carbon tetrachloride, thereby making it more toxic. When the carbon tetrachloride was given by inhalation to these animals, no change was noted in the lesions produced.

Minot and Cutler²² in 1928, in their work with dogs, found that the most obvious damage was done to the liver. The kidneys showed no striking abnormality except congestion.

Work in the other experimental animals shows no striking lesions in the kidneys, according to Gardner and his group. These workers used rabbits that are very susceptible to carbon tetrachloride. However, Mauro found that in a rabbit exposed to the fumes of thirty-five to ninety gms. of carbon tetrachloride per liter of air for ten days the kidneys were large and congested. The tubules, especially the convoluted ones and those of the descending loop of Henle, showed cloudy swelling. In the cortex there were many small and well-defined zones in which the epithelium of the tubules was desquamated and had fallen into the lumen. No glomerular changes were seen.

In two animals exposed for fifteen to twenty minutes on one occasion, there was very little found in the kidneys. He believed that in animals it took exposure over a period of days to cause renal lesions. Phelps and Hu in their work on guinea pigs found no renal lesions. Chandler and Chopra²³ in administering carbon tetrachloride to cats in doses varying from 0.25 c.c. to four c.c. per kilo found that it was highly toxic. They state that the most remarkable lesions were found in the kidneys. The convoluted tubules showed extensive fatty degeneration and frequently necrosis. The collecting tubules were but little affected. There was often desquamation of Henle's loops. Bowman's capsules were frequently infiltrated with blood, the glomerular endothelium was swollen, and the vessels dilated. In every instance in which they

were able to obtain urine at autopsy there was albumin present and there was frequent evidence of blood.

From the evidence submitted by the above workers it is evident that some animals are more susceptible than others to carbon tetrachloride poisoning, and it is further seen that it may be an individual reaction in any of the animals used as apparently it is in some human beings. One has similar evidence in other drug intoxications.

The treatment is based on the experimental work of Minot and Cutler²² who found that the addition of about five grams of a mixture of calcium carbonate and lactate to the regular meat diet for one to three weeks prior to ingestion of toxic doses of carbon tetrachloride protected dogs from poisoning. The animals on a low calcium diet were much more susceptible to poisoning. These animals had an increased icteric index and a low blood sugar. The blood calcium was normal but the administration of calcium tended to relieve the bilirubinemia and hypoglycemia though it had no effect on the pathological changes in the liver.

Owing to the great similarity between guanidine and carbon tetrachloride intoxication, Minot and Cutler investigated this and found that several hours after the ingestion of carbon tetrachloride there was a rise in blood guanidine and this was followed in a few hours by a fall in blood sugar. Calcium was antagonistic to guanidine and relieved both the hypoglycemia and hyperexcitability. Dextrose was found to relieve the hypoglycemia but not the hyperexcitability. The few clinical reports available have supported the use of calcium and glucose. The good results obtained with chlorides may be due to replenishing the chlorides depleted by vomiting.

Summary

The wide use of carbon tetrachloride in industry and the medical complications that may arise from its use make the recognition of intoxication by this chemical very important.

Most of the reports of intoxication by carbon tetrachloride have dealt with the central nervous system symptoms and gastrohepatic damage.

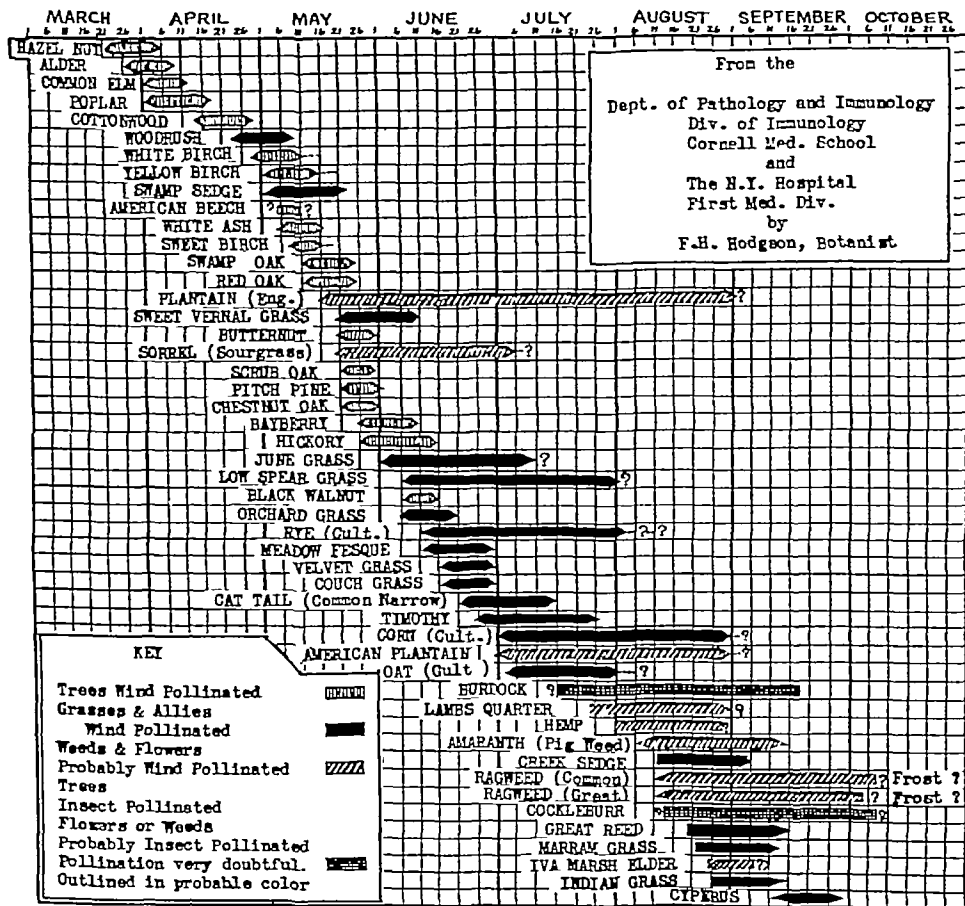
Two cases are here presented in which

the tree cases, and that an annual check-up is very important

Two important questions arise which we must try to answer *First*, is the perennial treatment more successful than the preseasonal? *Second*, how can we decide when a cure has been achieved—for a cure does occur quite frequently Chart III shows the satisfactory results obtained in about 400 late hay fever

counterbalance this better showing It is difficult for many patients to remember to take their injection each month and if the interval exceeds four or five weeks there is a greater tendency to produce a constitutional reaction The second objection is that a fair number of the perennially treated cases apparently become saturated and develop constitutional reactions on relatively small doses When this occurs

CHART I



patients treated during the five years from 1929 to 1934 inclusive The middle line shows the general average, the lower line those who were treated preseasonally, and the upper line those who received perennial treatment. Clearly, perennial treatment gave consistently about ten per cent better results than preseasonal treatment Two disadvantages tend to

it is wiser to stop all injections for four or five months and begin again with small weekly doses It is our impression that the perennial treatment is more apt to effect a cure, but we have no figures to prove this

The second question invariably put to us is the possibility of permanent relief Recent studies by Walker, Clarke, and

A DISCUSSION OF THE TREATMENT OF HAY FEVER, VASOMOTOR RHINITIS, AND ASTHMA

ALBERT VANDER VEER, M D , *New York City*

During the past twenty-five years the field of allergy has become so broad and has invaded other branches of medicine to such an extent that it would take more time than we have at our disposal merely to skim over an outline of the whole subject. Rather than waste time on this I think it will pay us to discuss in detail a few of the more important questions and procedures in the three main divisions of allergy, namely hay fever, vasomotor rhinitis, and asthma, omitting for the present any reference to urticaria, angioneurotic edema, eczema, migraine, and food and drug idiosyncrasies.

The more time we devote to research and study of this subject, the wider we find its ramifications and there is no branch of medicine where the doctor, whether general practitioner or specialist, can afford to be ignorant of at least the basic principles of hypersensitiveness. As my own experience in the past twenty-five years has been confined almost exclusively to the clinical side of allergy, I would prefer to limit myself to this, leaving the laboratory and experimental discussion to those who are more competent to deal with them.

We probably know more about the treatment of hay fever and have had better success in standardizing our procedures than in any of the other divisions of allergy. It is generally admitted that injections of pollen extracts will yield at least eighty per cent satisfactory results in at least eighty per cent of our patients, granted that the proper pollens have been selected and the proper doses given. Diets, acid or alkali therapy, local treatment with cautery, electricity or ionization, and many more methods have been tried from time to time, but in the long run have failed. In selecting the proper extracts to be used, two kinds of pollen charts are of great assistance to us. Chart I gives a bird's eye view of the pollination period of most of the important air born pollens of northeastern United States. It is made up from day to day observations by

a trained botanist in the field, averaged over a period of several years. By comparing the patient's seasonal history to this chart we can roughly determine what pollens may be causing his trouble. Chart II combines a chart of the daily variation in density of pollen of several of the important trees with a chart of the daily severity of the patient's symptoms. This is most essential for, while the intradermal tests will tell us to which pollens the patient is hypersensitive, they will not tell us to which he is exposed and this chart furnishes us with the missing data.

The patient in question, a doctor, came to us in March 1933, with a history of hay fever from the end of March to mid June. He gave good skin reactions to a dozen different pollens and an effort was made to combine these all in one mixture which resulted in his receiving very little of each pollen and very little relief from his hay fever. His injections were continued through the winter and thus larger doses were reached in 1934 but they were still inadequate. In 1935 three separate mixtures were made each containing from two to four pollens, and by giving these on different days, it was possible to reach much higher doses. Particular attention was paid to birch and oak. This was apparently successful as he had no hay fever after April 27. But here a new phenomenon presented itself in the severe attack lasting from March 17 to April 27, a period when he had been practically free in 1933 and 1934. Comparing this to the pollen chart shows that it almost exactly coincides with the elm pollination. He had given a good skin reaction to elm but as heretofore there was little trouble at this period, his dose of elm pollen was very low. It is reasonable to believe that an increase in dosage this year may give him as complete immunity as to the birch and oak.

While this is an extremely complicated case, sensitive to many different pollens, it demonstrates that with care and with cooperation on the part of the patient, a satisfactory result can be obtained. It also shows that hypersensitiveness may change from year to year, particularly in

asthma Removal of tonsils and adenoids does not clear up the tendency as it so often does in the non-allergic patient By the age of ten the youngster will be lucky if he has not had at least one attack of pneumonia and possibly a mastoid At twelve or thirteen a school in Arizona is suggested and this works splendidly for the child but not so well for the family or father's pocketbook At eighteen or twenty he has outgrown most of his trouble and can come east again, but by thirty he is quite apt to develop sinus infection or asthma If he is not lucky enough to get the change in climate his sinus infection may come much earlier A large number of children with such a history are hypersensitive to dust, feathers, etc., and with proper attention early in life they can be made over into healthy, husky youngsters perfectly able to stand their native climate and no more susceptible to sinus infection and pneumonia than their comrades The time to do this however, is before any damage has been done and it is the duty of the family physician to see that it is done just as he recommends diphtheria immunization, vaccination against small pox, and other protective measures

As vasomotor rhinitis is one of the most important and at the same time one of the most neglected fields of preventive medicine, the following case histories are presented to illustrate the points involved

Boy, aged ten, was referred to us October 17, 1925, with a history of vasomotor rhinitis and late hay fever for five years, no asthma His older brother also had vasomotor rhinitis with sinus infection and early and late hay fever On examination his sinuses lighted clearly On testing he gave marked reactions to timothy, plantain and ragweed pollens, and house dust During the winter of 1925-26 he was treated with injections of dust and stock cold vaccine. He was allright with the exception of slight colds in April and May Through the summer of 1926 he was given pollen injections and had practically no hay fever His dust and vaccine injections had been discontinued in the Spring and in November 1926 he had a bad case of grippe and bronchitis After this they were resumed and he did well from January through the rest of the winter He had a good deal of hay fever during the summer of 1927 due to underdosage of his pollen extracts His last course of dust and cold vaccine was given in 1928

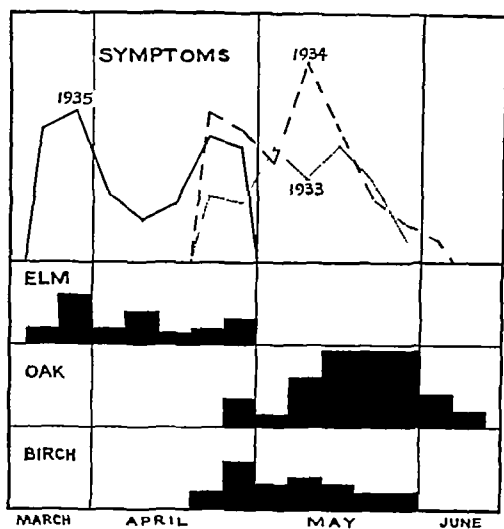
but his pollen injections were continued through every summer from 1929 to 1932 During this time he had no hay fever and averaged about two colds a winter He has had no treatment for the past four years and while he still has an occasional cold and would probably benefit with another course of dust and vaccine, he is as healthy as the average boy of his age and has so far escaped any operation on his sinuses and shows no tendency to develop asthma Much credit must be given his mother who insisted on bringing him to our office year after year against the strenuous opposition of a normal boy I am sure that her perseverance has saved him a lot of trouble and probably some disagreeable nasal operations

A similar condition but with a different outcome is presented in the next case history

Boy referred to us in 1929 at the age of eight. He had had eczema since infancy and was originally egg sensitive but had outgrown this He had many winter colds and had had early and late hay fever for four years He had been tested but never treated Six months earlier he had had a mastoid operation and was partially deaf in one ear On testing he gave marked reactions to grass and ragweed pollens and to house dust He was negative to egg white. For the past six years he had been treated with monthly injections of pollen and dust extracts and cold vaccine His hay fever is negligible but he still has an occasional winter cold His general health is excellent except for the partial deafness While it cannot be proved, I have a decided feeling that if he had been treated for his dust sensitiveness and hay fever several years earlier, he would have been saved his mastoid operation and deafness which he will carry through life

In considering the next division of allergy, namely asthma, we encounter more difficult problems than are met in hay fever and vasomotor rhinitis, and consequently our success is less striking At the outset we must divide our cases into four main groups, *first* those hypersensitive to inhalants as pollens, dust, and animal danders This group offers comparatively little difficulty and yields to treatment almost as readily as the simpler nasal conditions The *second* group comprises those hypersensitive to foods and drugs There are fewer of these and they can usually be solved by careful history, test diets, and judicious testing In the *third* group are patients hypersensitive to inhalants but with a complicating sinus

CHART II



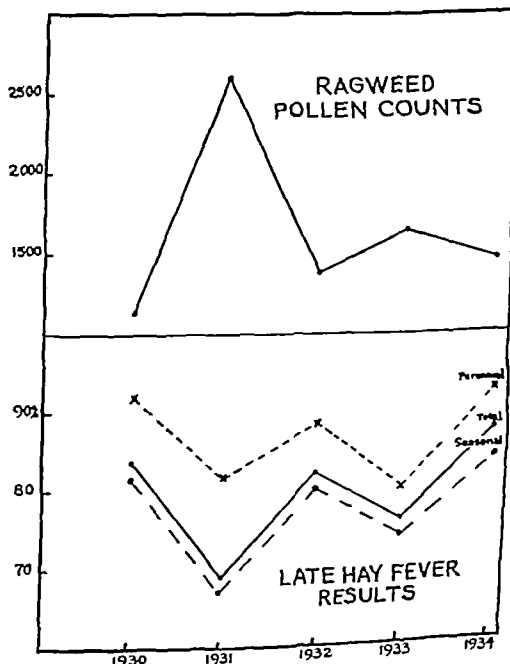
others show that from thirty to fifty per cent of hay fever patients may eventually become cured but that this usually occurs only after five or six years of successful treatment. It is extremely difficult to determine when this result has been obtained as in our experience (which does not agree with some other workers) the skin reaction usually remains positive. Laboratory tests with serum have so far failed to help us in this determination, but a fair clinical test may be made by treating a patient who has done well for four or five years up until the beginning of the season and then stopping all injections. If hay fever develops during the season it can be quickly controlled by another injection, but if the patient goes through the entire season without injections and remains free from symptoms the probability is that he will continue for one or more years with little or none.

Chart III also demonstrates the reasonable conclusion that the more pollen in the air, the poorer will be our results. The top line shows the total ragweed count for each of the five years and the satisfactory results obtained vary inversely with this curve.

Vasomotor rhinitis is another division in the field of allergy where intelligent treatment often yields excellent results. We have all seen cases where the avoidance of feathers, orris or household pets has caused a disappearance of the symp-

toms, but far and away the most important factor to be considered in this condition is ordinary house dust. Treatment with this extract in certain cases of vasomotor rhinitis and asthma has relieved the condition in an even more striking and favorable manner than have pollen extracts in hay fever. It cannot be emphasized too strongly that no patient should be operated on for sinus infection or similar nasal disturbance without first being tested out at least with the inhalant group and particularly with house dust. If this is done many a patient will be saved a septum resection or a sinus operation which seemed inevitable and many a poor postoperative result can be made completely successful if proper attention is paid to the associated allergic condition. Failure to investigate the possibility of a hypersensitive condition may prove particularly costly in the so-called dust sensitive child. The story of such a case is very characteristic. There is usually a family history of allergy. Almost from birth the patient shows an extreme susceptibility to head colds and after entering school is laid up every month or so with a respiratory infection usually with a complicating bronchitis and occasionally

CHART III



three classifications are used + + + denoting complete or practically complete relief from asthma, + + marked improvement, at least to such a degree that they could return to work, and + showing little or no improvement in their condition

By the term complete surgery is meant that all foci of infection were removed

TABLE I—POSTOPERATIVE FOLLOW-UP PERIOD

Asthma (173 cases)			Results		
			+	++	+++
1 to 1 year	26		12	7	7
1 to 2	33		9	16	8
2 to 3	35		8	11	16
3 to 4	26		10	11	5
4 to 5	27		4	9	14
5 to 6	26		9	10	7
			52	64	57
Complete Surgery			Incomplete Surgery		
	+	++	+	++	+++
1 to 1 year	2	2	10	5	1
1 to 2	4	7	5	9	4
2 to 3	3	5	5	6	2
3 to 4	5	6	5	5	0
4 to 5	0	5	4	4	2
5 to 6	0	3	9	7	2
	14	28	38	36	11
Infective asthma (86 cases)	8	11	18	17	5
Combined allergy (87 cases)	6	17	28	11	6
% Improvement	16	32	52	44	13
% Improvement	Total Number of Cases (173) — 70%				

which in the judgment of the operator and the allergist should be removed. By incomplete surgery is meant the removal of one or more foci but that something was left undone, either because of unwillingness or inability on the part of the patient, which in the judgment of the doctors should have been done.

Combined allergy means that some degree of hypersensitiveness was added to the infection while the purely infective cases showed no demonstrable hypersensitiveness.

Taking the entire group fifty-two or thirty per cent showed no improvement after a lapse of six months to six years following operation, sixty-four or thirty-seven per cent showed decided improvement and fifty-seven or thirty-three per cent were considered practically cured. Adding groups two and three together we find that seventy per cent of these asthmatic patients were definitely improved after operation on their sinuses. When we separate these figures into the

patients where the operator was allowed to do as he wished, we get at the real root of the matter. Where so-called complete surgery was done seventy-four out of eighty-eight patients or eighty-four per cent were definitely or completely relieved of their asthma, leaving only sixteen per cent not benefited, while in the group with incomplete surgery thirty-eight or forty-four per cent received no benefit at all, and forty-seven or fifty-six per cent were greatly relieved or cured. This shows that a thorough job is worth while.

Strange to say, the addition of hypersensitiveness to the infection did not make for a worse prognosis, in fact somewhat to the contrary, as eighty-eight per cent of the completely operated, combined allergy cases showed improvement as against seventy-nine per cent of the completely operated pure infective cases and even with the incompletely operated group, seventy per cent of the combined cases did well, as compared with forty-five per cent of the pure infective ones.

While these results are far from perfect, they do give cause for optimism when we consider that in such a serious condition as asthma secondary to sinus infection, two thirds of our patients at least may be cured or greatly benefited by proper operative interference. Emphasis should also be placed on the eighty-four per cent satisfactory results where the operator was allowed to follow his own judgment as against the fifty-five per cent improved following incomplete surgery. It certainly seems reasonable to bend all our efforts toward doing a complete job.

The last point I would try to make is that it may take some time to reach the maximum of improvement and that in the completely operated cases only a little over ten per cent showed no benefit after two years.

The following two case histories illustrate several of the points I have tried to bring out.

Asthma secondary to sinus infection with no complicating hypersensitiveness. Female, aged sixty-four, referred to us in February 1929 with a history of asthma of ten years, worse in winter. She was negative to all the inhalant and food tests with the exception of slight reactions to green pepper and turnip which obviously had nothing

infection The *fourth* group consists of cases secondary to sinus infection in whom no hypersensitive condition can be demonstrated Our greatest difficulties arise in treating those who fall in the two last groups and particularly those who have asthma secondary to sinus infection without complicating hypersensitiveness

It is from the patient in this fourth group we so often hear the question "Doctor, can you do anything to help my asthma? I have tried everything to no avail, and my friends say that asthma is incurable" A fair and honest answer to this question may be phrased as follows, "If we can clear up the infection causing your asthma, if you are willing and able to spend enough time and money and will consent to such surgical operations as may be necessary to eradicate foci of infection, then we may offer you the hope of complete cure or at least comparative comfort and the restoration to a useful life"

In this answer you have covered the main causes of failure in the treatment of asthma There are a few patients with extensive sinus or bronchial involvement or with a mold infection of the lungs to whom we can at present offer little hope There are many patients unable or unwilling to spare either the necessary time or money, or who refuse to undergo the unpleasant surgical procedures their condition may demand If you tell a man that he has tuberculosis and must spend a year of his life and several thousand dollars in order to get well he will manage to get away from his job and raise the necessary funds somehow If you tell an asthmatic that he needs a radical antrum operation which will keep him in the hospital for two weeks and should be followed by several months of recuperation he will often insist that he can spare neither the time nor the money and that he prefers to experiment with the Hay diet or ten drops of hydrochloric acid three times a day At the end of a year or so wasted in such foolish temporizing he may come back asking for relief (although he usually goes to some other doctor this time) and by then it is often too late This seems like an exaggerated picture, but it happens so frequently that I think we must face the facts After a campaign of many years the public has

become tuberculosis-conscious and realizes what the penalty of neglect may be. In the same way the public should be taught the price which may be paid for neglected or insufficiently treated asthma

Another barrier we confront in many of the intractable cases is the defensive remark "But doctor, I have already had several operations and they only helped me for a short time" This emphasizes the necessity for teamwork in our work The general practitioner can handle the majority of asthma cases successfully The more difficult ones require the services of a modern allergy clinic Here we have not only an allergist and a nose and throat surgeon operating in close cooperation, but in addition a general medical man, bacteriologist, chemist and botanist, with complete x-ray and laboratory facilities all uniting to determine what type of operation is to be done and what supplementary treatment in the form of vaccines, extracts, and general medical care are necessary In the olden days a surgeon might remove an appendix by lamp light, working on a kitchen table, with only an untrained assistant to help him, but we certainly do not believe that delicate abdominal or brain operations can be performed successfully today without the elaborate equipment of a modern hospital

Table I shows a tabulation of the results in 173 patients operated on in our allergy clinic at Roosevelt Hospital and in our private practice for the relief of asthma secondary to sinus infection As far as possible these patients were thoroughly worked up, both before and after operation They had a general physical examination, with the necessary laboratory tests They were completely tested out, and treated for their hypersensitiveness, if present Vaccines were frequently made from tissue removed at operation (not simply from superficial swab cultures) These vaccines were used with extreme care, for patients with sinus infection are often exquisitely sensitive to vaccine injections After care and general tonic treatment were not neglected All this was extremely important as most of these cases had already had one or more operations which had not resulted in the hoped-for cure

In studying Table I you will note that

MANAGEMENT OF EARLY SYPHILIS

FRANK C COMBES, M D , *New York City*

Clinical Professor of Dermatology and Syphilology New York University College of Medicine

The elimination of syphilis as a social, economic, and physical menace can be best accomplished by the effective management of the disease in its early phases, and by recognition and treatment in the pregnant infected woman. The former is of greater import, because of its numerical predominance, the greater difficulty of individual control, and its relatively greater infectiousness.

An effort to standardize the treatment of the disease in its early stages is justified for these reasons:

- 1 It occurs usually in healthy young adults who can best withstand the physical strain of treatment.

- 2 There is a certain uniformity to the infection at this time, warranting a certain uniformity of treatment.

- 3 Proper treatment administered at this time will result in eighty-nine to ninety-five per cent cures, far in excess to what may be expected at any other stage of the disease.

By early syphilis is meant that phase which elapses between the appearance of the initial lesion, through to the disappearance of the generalized cutaneous efflorescence. In those cases which present no generalized eruption, it may be considered to extend over a period of approximately three months from the appearance of the initial lesion. This corresponds roughly to the period of dissemination of the disease. The earlier treatment is instituted, the higher is the percentage of absolute cures. There should be no curtailment of treatment because it is initiated in the early seronegative phase.

Before treatment is undertaken, a definite diagnosis must be made on laboratory evidence, either by dark-field demonstration of the *Spirochete pallida* from the initial lesion or regional lymph nodes, or a positive properly interpreted serologic complement-fixation test. Under no condition should treatment be instituted on the grounds of a clinical diagnosis of a primary lesion alone. The absolute clinical differentiation of a primary

lesion from other granulomatous ulcers, erosions, and nodules of a nonsyphilitic nature is not possible. The therapeutic test has no place in the diagnosis of the initial lesion. If treatment with one of the arsphenamines is begun before a positive diagnosis is made, not only will the medication destroy the significance of subsequent serologic tests and nullify subsequent efforts to demonstrate the causative organism, but will implant an element of doubt regarding the diagnosis in the mind of both patient and physician, which experience has shown leads to an inadequate and indecisive course of treatment. This results in serious visceral complications in later life. I would rather rely solely on the mercurial pills andunctions of Hutchinson and Fournier, than to treat a patient with a recent infection inadequately or with a therapeutically inferior arsenobenzol. Experience reveals that, as a rule, the patient receiving no arsenobenzol at all is less subject to serious visceral involvement in later life, than one who receives it in insufficient quantities.

After a diagnosis of syphilis has been established, certain measures are indicated. These include a thorough examination of the patient with special attention to the gastrointestinal tract, heart, and renal systems. The teeth and sinuses should be examined to eliminate any remote focus of infection which might seriously impair the health of the individual, or predispose him to unfortunate and serious reactions to arsenical medication. Oral cleanliness is important and should be maintained throughout the entire course of treatment. Disorders of digestion, if present, should receive attention and a daily movement of the bowels be insisted upon. The hepatotoxic nature of the arsenobenzols requires that the liver activity be normal especially its glycogenic function. Some obscure gastrointestinal reactions to the arsenobenzols may be avoided by the administration of glucose intravenously, or by

ALBERT VANDER VEER

[N Y State J M.]

to do with her condition. On examination, she showed a pansinusitis. She was treated for several months with antral irrigations and injections of stock and autogenous vaccines. As there was no particular improvement in her condition, permanent windows were made in both antra. Following this, she did well for a year, her only attacks of asthma being those brought on by overdoses of vaccine. Her asthma then gradually increased in severity and she developed extensive polypoid degeneration of the ethmoids. In December 1930, extenteration of the left ethmoid and sphenoid was done, followed by a bilateral, complete antrum operation. Since then she has done very well. Occasionally she develops a cold with mild asthma for a day or two, but at seventy she is still working hard all year round.

In July 1934 she developed polyps in her right ethmoid and sphenoid and these were removed. Her present treatment consists of a vaccine injection about once a month. The last examination of her nose in December 1935 showed it to be in excellent condition. With the experience gained from similar cases in the last ten years, we are inclined to feel that much time and trouble may be saved by a complete operation earlier in the course of the disease rather than temporizing with constant antral irrigations and antral windows.

Combined infection and hypersensitive

Female, aged forty-seven, referred to us in September 1933 with a history of vasomotor rhinitis for eight years and beginning asthma. In 1923 polyps were removed from her nose. Six years later she had a double radical antrum operation, but within six months polyps were again removed. Two years later another sinus operation was performed. In other words, she had had extensive nasal surgery performed by a competent operator over a period of ten years, not only with no improvement in her condition, but actually the development of asthma made the outlook much more serious. On examination, she showed a pansinusitis with extensive polypoid degeneration. On testing, she gave marked reactions to house dust and ragweed, but was negative to all the other inhalants and foods. She was started on dust and ragweed injections, but as she came to us in the middle of the hay fever season, she had a pretty stormy time of it for a month. On October 16, 1933 we persuaded her to go to Roosevelt Hospital in an air-conditioned room for an environmental test. Her asthma promptly cleared up, which made us feel that her hypersensitivity was at least as important as the infection. By October 23 she had improved sufficiently to have a bilateral ex-

enteration of ethmoids and sphenoid with the removal of a number of polyps. She made an uneventful recovery. Dust and ragweed injections were continued through the winter and to them were added small doses of stock and autogenous vaccines. She went through the winter of 1933-34 with an occasional slight cold, but no asthma. The summer of 1934 had very little hay fever. Dust and vaccine injections were omitted in the winter of 1934-35 but she had little or no trouble. Ragweed injections have been continued and last summer (1935) she had no hay fever at all. In November 1935 she had an attack of asthma due to exposure to dust and coal gas while moving. Examination of her nose on November 25, 1935 showed it to be perfectly free and clear of infection. What a tremendous amount of trouble she would have been saved if she had been completely examined when the vasomotor rhinitis first appeared!

Urticaria and angioneurotic edema secondary to infection. Male, aged forty-seven, referred to us January 14, 1933 with the history of migraine and indigestion for many years, vasomotor rhinitis about two years, and urticaria and angioneurotic edema for the past month. He felt sure that some food was to blame and suspected ham, pigs' knuckles, sauerkraut, and grapes. On examination he showed many foci of infection including tonsils, many non-vital teeth, and a cloudy right antrum and ethmoid. His antrum was irrigated on January 16. Within two days the urticaria had practically cleared and was entirely gone after a week. A few food tests were done showing moderate reactions to rice, tea, and coffee, and a negative reaction to pork. Eight infected teeth were extracted and the right ethmoid extenterated, followed by a right radical antrum operation. He was then given injections of autogenous vaccine. Improvement was gradual through that summer. He was again seen in February 1934, and at that time had gained seventeen pounds. Hemoglobin had risen from sixty to eighty-two per cent. He was eating everything without indigestion and had no more urticaria. The patient was not seen again for two years. During that time he was perfectly well except for some nervous complaints. He stated that recently he had begun to have about one hive a week. On examination it was found that his tonsils were still large and infected and his left anterior ethmoid showed extensive polypoid degeneration. We feel that this ethmoid infection, plus his tonsillar infection is the cause of the recurrence of his hives, and we made plans for operations to remove the last source of infection.

which cannot be overestimated. You will be rewarded with a patient who will co-operate, anticipating the day when he will again be a healthy, disease-free individual.

The social problems of his infection will bear some investigation. Syphilis constitutes a social danger from four points of view:

- 1 By the damage which it inflicts on the individual
- 2 By the damage it inflicts on the family
- 3 By its hereditary consequences
- 4 By its degenerative effect on the race

Every person with syphilis must be considered, not merely as an individual, but as an integral working part of the community. What effect has his infection had upon his family, both medically and economically? Are other members of the community infected, or are they likely to be subsequently exposed to infection? This must be exhaustively discussed with the patient and appropriate measures must be taken for examination and protection of contacts. The patient should be informed as to the infectious nature of the disease and of the various avenues through which he may accidentally convey it to others. Fortunately a week of anti-syphilitic therapy renders contagion by ordinary immediate and intermediate contact negligible. In addition, the *Spirochete* is not a viable organism outside of the host, dying immediately on drying. For this reason, the presence of the disease in food-handlers is no menace to community health. Furthermore, I have never seen an infection conveyed by means of food, tableware or the privy. However, a great deal can be accomplished from a public health standpoint by considering the potential danger to the community of the infectious patient. In addition, it is the duty of the physician to determine in each individual case, if possible, the source of infection. With few exceptions, which can be handled privately, these sources should be reported to the local public health authorities.

We now come to the third consideration, namely the specific treatment, directed toward the eradication of the infection. The chancre requires no local specific medication. The secret of success lies in the individualization of the patient and the proper administration of well-

proven spirochetocidal drugs. In no case should the treatment be limited to a single remedy. In no disease have we such a formidable array of chemicals of such proven value as in syphilis. Make intelligent use of them. If the patient does not respond to one, after sufficiently intelligent trial, lose no time in administering another remedy of different chemical structure, which is capable of attacking the infection from another, possibly more vulnerable point. Rely more on your own experience and that of competent clinicians in selection of drugs. Avoid claims and advice of manufacturers and advertisements.

The curability of the disease depends, in a large measure, on the time treatment is first instituted. Treatment begun in the seronegative phase, on the basis of the dark-field demonstration of *Spirochete pallida*, materially increases the probability of complete eradication of the infection.

The arsenobenzols—arsphenamine, neoarsphenamine, silver arsphenamine, sodium arsphenamine, and sulpharsphenamine—are the most potent spirochetocidal agents at our disposal. Recently introduced is a preparation of oxidized arsphenamine, called Mapharsen, which promises to be a very useful spirochetocide. It has not yet, however, had sufficient clinical trial to warrant its general use in early infections.

The arsenobenzols are most effective during the early period of dissemination of the spirochete throughout the organism. This is not only a great advantage from a therapeutic standpoint, but since they produce rapid sterilization of superficial lesions within a few hours, they remove the patient as a menace to the community.

The arsenobenzols have four serious disadvantages:

- 1 They cannot penetrate tissue which is poorly vascularized.
- 2 They cannot penetrate the nervous system in appreciable quantities.
- 3 They are neurotoxic, due to their arsenic content.
- 4 They are hepatotoxic and have a depressing effect upon the bone-marrow, probably due to their benzol derivation.

Therapeutically, there is little apparent difference between the various preparations, if given in proportionate dosage.

advising the patient to eat several pieces of candy or some glucose a few hours before its administration. This seems to fortify the liver and lessen the possibility of damage to that organ.

The urine should be examined, especially for albumin, sugar, and indican, before treatment is started and again at biweekly intervals during the treatment, so that upon the appearance of renal irritation, treatment may, if advisable, be modified. However, the appearance of traces of albumin and a few casts during treatment if not accompanied by nitrogen retention, is no cause for alarm. In most cases, the urine clears upon completion of the antisyphilitic therapy. I have never seen any serious damage inflicted upon a healthy renal system by properly administered heavy metals.

The heart should be examined organically and functionally. It might be advisable to obtain an electrocardiogram, so that a permanent graphic record of cardiac function is available for comparison with any future involvement of that organ which might supervene. A myocardium previously injured by rheumatic infection is more prone to attack by syphilis than a healthy organ.

A complete cytologic examination of the blood should be made before treatment is begun and repeated at intervals. Bismuth and the mercurials have been responsible for the development of simple anemias, and the arsenobenzols, particularly neoarsphenamine and sulpharsphenamine, are capable of producing fatal blood dyscrasias of the agranulocytic type.

The patient should then be interviewed and advised regarding the hygienic, economic, and social aspects of his infection. Physical disorders of all types having been corrected, and the patient having been put in condition to withstand not only the ravages of the syphilitic virus, but also the chemotherapeutic shock of the spirocheticidal drugs, he should be informed of the advisability of leading a temperate life. He should have adequate and appropriate exercise, sunlight, fresh air and recreation, and a nutritious well-balanced diet. This is as important in this infection as in tuberculosis. He should be advised against over-

indulgence in spiritous liquors. There is no doubt that overindulgence in alcohol predisposes to nerve and vascular complications of a serious type. The use of tobacco also should be modified. Mucous patches and leukoplakia are more common in those who use tobacco.

One of the greatest difficulties which confronts the syphilologist in some cases is to successfully control the neuresthenia with which the patient is afflicted. This frequently requires greater therapeutic resourcefulness than the syphilophobia of the noninfected individual.

In addition to the general medical problem, one must discuss with the patient the economic questions, which are of mutual interest both to him and the physician. The patient must be fully informed of the approximate cost of treatment, and subsequent periods of observation necessary to insure complete eradication of the infection. In other words, there must be honest and complete cooperation between the patient and physician. The cost of treatment must not be prohibitive. It should be based on the income of the individual. If this is not taken as a basis of cost, one is likely to discover that intervals between treatments will shortly be regulated by the patient's ability to pay, and eventually, treatment will be prematurely discontinued entirely, at a time when its vigorous continuance should be of essential importance. Unfortunately, infection with syphilis occurs usually in young individuals when their financial status is very limited. The greatest number of infections occur in women at the age of twenty years, and in men at the age of twenty-three years. Later in life when the disease has reached so-called latency, complete and permanent cure cannot be assured at any price.

In early cases, one should assure the patient that he *can be cured*. Among the laity, there is a general impression that the disease is incurable. The patient approaches his physician with great apprehension, and hesitatingly asks, "Can I be cured?" He hopes for an affirmative reply, but anticipates a negative one. If you can assure him that with proper attention he will rid himself of the infection and will be able to marry and rear healthy children, you will have removed a burden from his mind, the importance of

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- 3 By its hereditary consequences
- 4 By its degenerative effect on the race

Every person with syphilis must be considered, not merely as an individual, but as an integral working part of the community. What effect has his infection had upon his family, both medically and economically? Are other members of the community infected, or are they likely to be subsequently exposed to infection? This must be exhaustively discussed with the patient and appropriate measures must be taken for examination and protection of contacts. The patient should be informed as to the infectious nature of the disease and of the various avenues through which he may accidentally convey it to others. Fortunately a week of anti-syphilitic therapy renders contagion by ordinary immediate and intermediate contact negligible. In addition, the *Spirochete* is not a viable organism outside of the host, dying immediately on drying. For this reason, the presence of the disease in food-handlers is no menace to community health. Furthermore, I have never seen an infection conveyed by means of food, tableware or the privy. However, a great deal can be accomplished from a public health standpoint by considering the potential danger to the community of the infectious patient. In addition, it is the duty of the physician to determine in each individual case, if possible, the source of infection. With few exceptions, which can be handled privately, these sources should be reported to the local public health authorities.

We now come to the third consideration, namely the specific treatment, directed toward the eradication of the infection. The chance requires no local specific medication. The secret of success lies in the individualization of the patient and the proper administration of well-

proven spirochetocidal drugs. In no case should the treatment be limited to a single remedy. In no disease have we such a formidable array of chemicals of such proven value as in syphilis. Make intelligent use of them. If the patient does not respond to one, after sufficiently intelligent trial, lose no time in administering another remedy of different chemical structure, which is capable of attacking the infection from another, possibly more vulnerable point. Rely more on your own experience and that of competent clinicians in selection of drugs. Avoid claims and advice of manufacturers and advertisements.

The curability of the disease depends, in a large measure, on the time treatment is first instituted. Treatment begun in the seronegative phase, on the basis of the dark-field demonstration of *Spirochete pallida*, materially increases the probability of complete eradication of the infection.

The arsenobenzols—arsphenamine, neoarsphenamine, silver arsphenamine, sodium arsphenamine, and sulpharsphenamine—are the most potent spirochetocidal agents at our disposal. Recently introduced is a preparation of oxidized arsphenamine, called Mapharsen, which promises to be a very useful spirochetocide. It has not yet, however, had sufficient clinical trial to warrant its general use in early infections.

The arsenobenzols are most effective during the early period of dissemination of the spirochete throughout the organism. This is not only a great advantage from a therapeutic standpoint, but since they produce rapid sterilization of superficial lesions within a few hours, they remove the patient as a menace to the community.

The arsenobenzols have four serious disadvantages:

- 1 They cannot penetrate tissue which is poorly vascularized.
- 2 They cannot penetrate the nervous system in appreciable quantities.
- 3 They are neurotoxic, due to their arsenic content.
- 4 They are hepatotoxic and have a depressing effect upon the bone-marrow, probably due to their benzol derivation.

Therapeutically, there is little apparent difference between the various preparations, if given in proportionate dosage.

Neoarsphenamine and sulpharsphenamine give rise more frequently to delayed toxic effects.

Silver arsphenamine, which contains fourteen per cent silver, may on rare occasions, cause argyria. Its arsenic content is approximately the same as neoarsphenamine. Neoarsphenamine, because of its ease of administration, is used almost exclusively in Europe and is by far the favored preparation in this country. Some syphilologists consider arsphenamine therapeutically superior to neoarsphenamine. However, while the former is apparently more efficient in healing infective lesions, I believe that in sufficient dosage neoarsphenamine compares very favorably with it. Mercury, the oldest of remedies, has a very definite place in our therapeutic armamentarium. It should not be forgotten, nor its use neglected. Frequently a case will respond to it when more modern remedies have failed. I am not one of those of the opinion that no case of syphilis can be cured without arsenobenzol. I hesitate to think that such worthy syphilologists as Fournier, Hutchinson, and Renaut failed to ever rid a patient of the disease.

Bismuth, introduced by Levaditi in 1921, has nearly displaced mercury in the treatment of the disease. It has certain advantages over the older metal, particularly in that it is therapeutically more active, and is relatively less painful on injection. In addition, it may be given in the form of salts which are lipo-soluble, more easily dissociated, and have a greater affinity for the reticulo-endothelial system. However, it cannot be effectively administered by mouth or byunction.

Classifying our specific drugs, according to their influence on the symptoms of syphilis, as well as the causative organism, we must place the arsphenamines far above the others, giving second place to bismuth and third to mercury.

Various clinicians have from time to time advocated different methods of routine treatment of early syphilis. Most of these methods are satisfactory and based on accurate and extensive clinical observations. It is not necessary to discuss them in detail. However, certain principles should be considered in any routine treatment.

1 It should be instituted with arsenobenzol of sufficient dosage.
2 The intervals between the administration of arsenobenzol should be regulated according to the excretion of the product. This varies initially from approximately forty-eight to seventy-two hours, increasing as administration is repeated until the maximum excretion is completed in five to seven days.

3 Treatment of early syphilis should be continuous from twelve to eighteen months, with a period of subsequent observation extending over five years.

4 A total dosage of twenty to thirty grams of neoarsphenamine or its equivalent should be administered.

5 A total of two to three grams of bismuth element should be administered or an equal amount of mercury. Proportionate amounts of each may also be administered. You should be familiar with the amount of element present in the preparation used.

6 Treatment should be ended with a course of approximately one gram of bismuth or mercury, rather than arsenobenzol.

Schermerhorn of Schenectady informs me that he has been obtaining good serologic and clinical results using continuous weekly injections of neoarsphenamine, with simultaneous administration of interrupted courses of a heavy metal.

Roby of Rochester, (N Y) for the last ten years has been giving sulpharsphenamine continuously. His objective is to administer forty consecutive weekly treatments to every patient. Up to last year he had administered well over 60,000 injections. He uses no heavy metals unless the patients are unable to continue with the sulpharsphenamine. This rarely occurs. His results have been very good. Such methods shorten the time of treatment but would require close observation of the patient for evidence of arsenic intoxication. There is also evidence to show that neglect of heavy metals results in a tendency to the "neuro-recidives" of Ehrlich. This type of neuro recurrence increased perceptibly immediately after the introduction of salvarsan therapy. The reason for this has been explained on the basis that enthusiasm over the new arsenical had resulted in insufficient mercurial therapy. It can be prevented by proper administration of sufficient heavy metal in conjunction with arsphenamine.

My own method (Table I) has afforded

excellent results over the last ten years. Although the arsenobenzol and type of heavy metal salt have varied, in principle the routine in most cases has been the same.

It is important that the physician familiarize himself with the preparation he is using. There are many preparations of arsenobenzol available, which, although spirochetocidal, vary considerably in

sociation. Many of them contain small amounts of arsenic as a contaminant. Whatever preparation is used the syphilologist should be familiar with its bismuth content, the vehicle, and its rate of absorption and excretion. This will help to regulate the dosage and frequency of administration. If you are using certain preparations and are satisfied with them, do not change, except for good and sufficient reason.

The administrative technic of the arsenobenzols can be learned only by actual observance and practice. They are administered intravenously with the exception of sulpharsphenamine which is given either intramuscularly or subcutaneously. While I do not consider it as safe, nor in conservative dosage as effective as the others, Pfeiffer of Albany tells me that he has had excellent results with it and a remarkable freedom from toxic effects over a period of twelve years. He uses a maximum dosage of 0.45 gms considering this quite as effective as neoarsphenamine intravenously. It is of value when intravenous therapy is contraindicated or impossible, because of the small size or depth of the veins. If the perivascular tissues should be accidentally infiltrated with one of the arsenobenzols, a few cubic centimeters of a 0.5 per cent novocain solution containing one per cent sodium thiosulphate should be injected immediately into the infiltrated tissues. The overlying skin should be painted with two per cent oil of mustard in alcohol until reddened. Cold compresses should be applied the first day and subsequently hot compresses.

Bismuth is best administered intramuscularly. The dosage is measured at approximately 0.5 mgm bismuth (element), per kilogram, per day. I prefer, as a bismuth preparation, a colloidal bismuth hydroxide suspended in oil, containing 100 mgm of metal to the cubic centimeter. It is administered in doses of 0.5 to 1.0 c.c., is painless, causes no infiltration, and does not accumulate at the site of injection. Being very readily dissociated, it is quickly ionized, liberating free bismuth. It is more slowly absorbed than the insoluble preparations. As an alternative, I use a finely divided bismuth sub-salicylate oil suspension, which contains about sixty per cent metallic bis-

TABLE I—BASIC SCHEDULE FOR TREATMENT OF EARLY SYPHILIS (MALE, WGT 70 Kg.)

Week				
1	Two Neoarsph	0.3 & 0.6		
2	Two "	0.6		
3	"	0.6		
4	"	0.6		
5	"	0.6		
6	"	0.6	Bismuth diasporal	0.5 c.c.
7	"	0.6	"	0.5 c.c.
8	"	0.6	"	0.5 c.c.
9-16	"	0.6	"	1.0 c.c.
	Blood Wass		Eight	
17	Neoarsph	0.6		
18	"	0.6		
19	"	0.6		
20	"	0.6		
21	"	0.6		
22	"	0.6		
23	"	0.6		
24	"	0.6		
25	"	0.6	Bismuth diasporal	0.5 c.c.
26	"	0.6	"	0.5 c.c.
27-34	"	0.6	"	1.0 c.c.
	Blood Wass and spinal fluid exam.			
35	Neoarsph	0.6		
36	"	0.6		
37	"	0.6		
38	"	0.6		
39	"	0.6		
40	"	0.6		
41	"	0.6		
42	"	0.6		
43	"	0.6	Mercury salicylate	0.06 gm.
44	"	0.6	"	0.06 gm.
45-55	"	0.6	Eight	0.06 gm.
	*Blood Wass			
56	Neoarsph	0.6		
57	"	0.6		
58	"	0.6		
59	"	0.6		
60	"	0.6		
61	"	0.6		
62	"	0.6	Bismuth subsalicylate	0.1 gm.
63	"	0.6	"	0.1 gm.
64-71	"	0.6	Eight	0.1 gm.
	Blood Wassermann			
	Total Neoarsphenamine	23.7 gm.		
	Total Bismuth (Element)	2.5 gm.		
	Total Mercury (Element)	0.3 gm.		

*A rest period of six to eight weeks may be allowed between the third and fourth courses of neoarsphenamine.

therapeutic activity. The efforts to prepare a product of lessened toxicity to the host have resulted frequently in one of lessened therapeutic value, although conforming to government standards. Over a hundred preparations of bismuth salts and metallic bismuth suspensions are advertised. These vary in their efficacy because of their varied bismuth content, rate of absorption, excretion, and dis-

muth, in doses of one to two cm This is one of the more widely used bismuth salts Soluble bismuth plays a minor role It is necessary to administer it at too frequent intervals for convenience, it does not maintain a good constant level of saturation in the tissue, and in addition its rapid excretion produces undue renal irritation Sodium potassium tartrobismuthate is a good example of a soluble preparation, containing forty-one per cent bismuth element It is administered in doses of 0.1 to 0.2 gm

Mercurials in general are of three types, soluble, insoluble, and colloidal Of the soluble preparations, the bichloride, succinimide, and biniodide are in general use Because of their rapid absorption and excretion, they should be administered daily or every other day, in doses of 0.1 to 0.15 gm intramuscularly They are all quite painful The insoluble mercury salicylate in oil suspension is less painful and slowly absorbed and excreted This is a decided advantage It is administered intramuscularly, in doses of 0.6 to 1.2 gm every five to seven days Two colloidal preparations are in general use, namely, the sulphide and calomel I prefer the latter It is given intravenously in doses of five cc every three days Each dose represents 0.1 grams of mercurous chloride It is slowly ionized Hazen considers calomel the most powerful antisyphilitic drug at our disposal, with the exception of arsphenamine and neoarsphenamine I find it of definite value in early cases in which arsenobenzol, for some reason or other is contraindicated It is also effective in early eye complications which do not respond well to the arsphenamines

There are certain drugs which frequently have a very definite role in the treatment These are not specific, but indirectly exert a favorable influence They are iron, sulphur, and iodides I have never seen any indication to administer the latter in early syphilis although some clinicians favor their use They are very likely to upset the digestion and produce objectionable cutaneous eruptions These untoward reactions are not as common in late syphilis when the iodides exert a very definite favorable influence Iron is frequently indicated as a tonic and in combating the anemia in-

duced in some cases by mercury and bismuth It may be administered by injection or by mouth In utilizing the latter route, care must be taken not to interfere unduly with the patient's digestion or evacuation

Sulphur plays a very definite role Its action is to encourage the excretion of inert arsenic and the heavy metals It forms soluble and easily eliminated compounds, favoring recovery from toxic effects of saturation Arsenic and the heavy metals are retained in varying amounts in the organism for an indefinite period This storage is therapeutically ineffective, as the heavy metals are only spirochetocidal in their transit through the body Elemental arsenic is not spirochetocidal McMurtry aptly expressed the action of sulphur by saying that it kept a continuous flow of heavy metal passing through the body It is best administered as sodium thiosulphate or as a colloidal sulphur intravenously It should not be given during a course of arsenobenzol as it interferes materially with the spirochetocidal action of that drug

At the completion of the second course of treatment, a complete examination of the spinal fluid should be made This can be obtained with no discomfort to the patient by means of suboccipital puncture The examination should include cytology, complement fixation, gold-curve, and chemical examination The latter should include a quantitative globulin estimation A normal result at this time will obviate the necessity of repetition of the examination Experience has shown that infection of the central nervous system occurs during the period of dissemination of the disease, although clinically it may not reveal its presence for years

I have tried to emphasize briefly a few of the important considerations attending the treatment of early syphilis Certain of them must be modified, depending upon the needs and requirements of the individual case Always familiarize yourself with the efficiency of the organic functions of the patient, the vagaries of the Spirochete, and with the physicochemical properties of the remedies used in combating the infection

SUCCESSFUL SUTURE OF A PENETRATING STAB WOUND OF THE HEART

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J M, a Porto Rican male, age twenty-three, was admitted to the Harlem Hospital, October 18, 1934. He had received three stab wounds. He was unconscious and therefore it was impossible to determine how long before admission he had sustained them. Nor could he remember the time interval even when he regained consciousness after operation. He was pulseless and his blood pressure was zero. He breathed stertorously. His skin was cold and sweaty and the conjunctivæ were pale. Examination of the chest showed a tympanic percussion note and distant vesicular breath sounds throughout the left hemothorax. In the right side of the chest, there was a normal percussion note and the breath sounds were vesicular in character and easily heard. While the area of cardiac dullness was replaced by a tympanic area on the left, the right border of cardiac dullness extended one and three-quarter inches beyond the right border of the sternum. The heart sounds were muffled and rapid. No murmur or bruit was heard.

The three wounds were situated as follows (1) in the fourth interspace, one inch from the left sternal border, (2) in the right midclavicular line in the seventh interspace, (3) in the left posterior axillary line in the tenth interspace.

The patient was apparently suffering from a penetrating stab wound of the heart and therefore, it was thought advisable to explore the chest and observe the abdomen further for possible intra-abdominal injury. The heart injury was properly diagnosed by the admitting physician and the patient was sent directly to the operating room.

Operation. Incision was attempted under local anesthesia but since the patient, though unconscious, moved about on the table, ether was administered. The incision, which is indicated in Fig 1 was carried down to the ribs, and the flap containing skin and the underlying portion of pectoralis major muscle was turned back in one piece. The fourth left costal cartilage near the costochondral junction was found severed in part and there was a laceration of the parietal pleura about three-quarter inch in length in the fourth interspace. The orifice into the pleural cavity was quickly packed with gauze to prevent sucking and the fourth and fifth

costal cartilages together with about two and one-half inches of adjacent rib were removed. A window was then cut in the parietal pleura corresponding to the area of resected ribs. Immediately the lung was grasped with a sponge forceps and held up to the chest wall in order to stabilize the mediastinum. About eighteen ounces of blood were evacuated from the pleural cavity. The pericardium appeared tense and on its lateral aspect there was a hematoma about one and one-quarter inches in diameter. This was apparently the wound of entrance plugged with blood clot. The pericardium was then opened by a three inch longitudinal incision at which time a tremendous gush of blood occurred which spurted over the operating table and down upon the floor. This continued until the heart was drawn forth from the pericardial sac and a suture passed through the heavy muscular apex. The heart was then drawn well into view and by the gentle traction of this suture the bleeding was almost completely controlled. A laceration was found leading into the chamber of the right ventricle as indicated in Fig 2. The wound was about five-eighths inch in length, slightly irregular, and was situated about one-half inch from the anterior descending coronary artery, and about one inch from the auricular-ventricular groove. Two sutures of chromic catgut including the entire wall of the ventricle controlled bleeding from the heart. When the pericardium was emptied of its blood, the anesthetist reported a freely palpable pulse, rapid but of good quality. The traction suture was removed from the apex and the heart was returned to the pericardial sac. The pericardium was not sutured, in order to allow drainage into the pleural cavity, thus preventing heart tamponade from any exudate that might develop in the pericardial sac. The defect in the chest wall produced by the resection of ribs and cartilage was repaired by suturing the lung to the chest wall so that it completely obturated the defect. The muscle-skin flap was then returned and sutured in place and the space beneath it drained by iodoformized gauze.

The blood pressure which was previously zero rose to 110 systolic and ninety-five diastolic. The pulse was regular and of

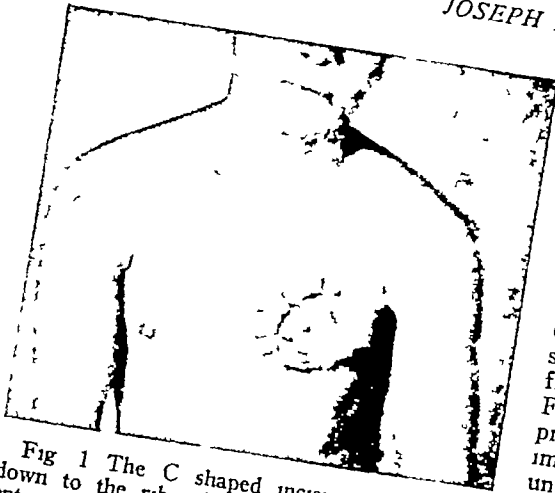


Fig 1 The C shaped incision was carried down to the ribs. The scar of the wound entrance may be seen as a small dark area within the arc of the incision. Although there exists a fairly large defect in the bony thorax including the parietal pleura there is no herniation of lung and only on coughing is there a slight impact.

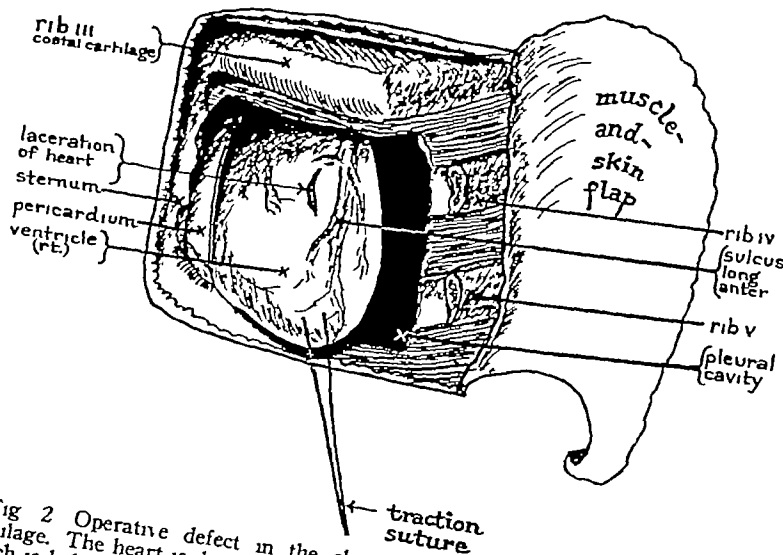


Fig 2 Operative defect in the chest wall with resection of ribs and cartilage. The heart is drawn forth by means of a traction suture. The lung, which is held in the wound by means of a sponge forceps, is not shown. The relative size and position of the laceration of the right ventricle is illustrated.

good quality with a rate of 120 beats per minute

Continuous intravenous physiological saline solution was administered. About 3500 cc were given within the first three hours and through the same apparatus a transfusion of 500 c.c. of citrated blood was given before the end of the operation.

Convalescence was extremely stormy. This was apparently due to infection. The tem-

perature was high, and the pulse frequently reached 160 beats per minute. Transfusions of citrated blood were given on alternate days in the first week. Morphine was given at regular intervals to quiet his extreme restlessness and thereby lessen the burden on his heart. He appeared to be getting rapidly worse and on October 26 he appeared moribund. On October 29 a profuse purulent discharge occurred from the wound. The source of this pus, whether from pleura or from pericardium, could not be ascertained. Following this, his condition was greatly improved. He rapidly gained strength, appetite untoward symptoms occurred until December 1, when, although apparently he had been quite well, he suddenly was seized with convulsions, was extremely excited, and then went into a coma. His pupils were dilated. This attack occurred in the evening and the following morning the patient appeared normal again. This seizure, it was later dis-

covered, was due to the surreptitious smoking of a marijuana cigarette. He was kept in the hospital until January 8, principally that he might be observed. At present his condition is excellent and he is symptom free. He has led a vigorous life without any ill effect.

The electrocardiographic changes observed postoperatively by Dr. Martin are of importance. It is interesting to note that in this

case the changes he describes are similar to those of clinical coronary occlusion and to those of experimental occlusion and section. Within two months, however, the abnormal coronary signs returned to normal.

Prior to this successful case, the author operated without success upon four patients with penetrating stab wounds of the heart. Observations in these cases and in those operated upon by other members of the staff may be of interest. Unfortunately, because of the rarity of the condition, it is difficult to gain actual experience in these cases and a reading of the literature alone does not adequately prepare one to perform the operation successfully. One may have to learn certain facts from one's failures.

The usual methods described for approach to the pericardial cavity have proved clumsy, as a rule, in our hands. The usual methods include a flap composed of rib and cartilage and underlying pleura, or an intercostal incision with section of ribs so that they may be retracted in a slung effect. Not only is the approach difficult but closure presents some hard problems. We have found it not easy to make an airtight closure of the pleural cavity after the usual methods of approach.

In all cases, pneumothorax of the left chest, collapse of the lung, and mediastinal shift occur. No provision is made for these complications which reduce the vital capacity. By means of the operation described by the author in cases of penetrating stab wounds of the lung,¹ it has been found possible to close the orifice in the chest wall, reduce the pneumothorax, and prevent mediastinal embarrassment. This is partly illustrated in Fig 3.

"Palming" the heart has been advocated as a method of drawing it forth, controlling hemorrhage by pressure on the large vessels at the base of the heart and steadying the organ so that sutures may be introduced to close the lacerated wound. In our experience traction by means of a suture placed in the thick muscular apex is a far better method. In the former procedure, greater hemorrhage and stoppage of the heart or marked delirium cordis is the rule.

Plugging the hole in the heart with a finger proved, on occasion, a dangerous procedure. In some instances it may con-

trol hemorrhage but in others it may produce a more extensive laceration of cardiac musculature, so large that it may prove too great or irregular to suture securely. The variations in friability of cardiac musculature when manipulated in operation are striking. In general in suturing the heart a fine intestinal needle should be used. The "nontraumatic" type with the suture fastened in the head of the needle is ideal. Large caliber needles may produce holes in the heart muscle big enough to allow for a profuse outpouring of blood and necessitate a separate closure. The sutures should be carefully prepared in advance and placed where the operator may grasp them at the opportune time, for delay at this time may prove costly. The type of suture material to be selected is apparently of no great importance. Silk or catgut may be used provided it is fine and strong. No patient died because sutures were incompetent. We were able to observe that healing of the heart muscle begins early, and in those cases in which death occurred two or more days after operation, repair was uniformly firm.

The internal mammary artery and vein must be sought and ligated. When lacerated these vessels may bleed from either side. In a patient who has lost a large quantity of blood the artery may fail to spurt when thoracic exploration is made. However, when the lacerated heart has been repaired and fluids have been ad-

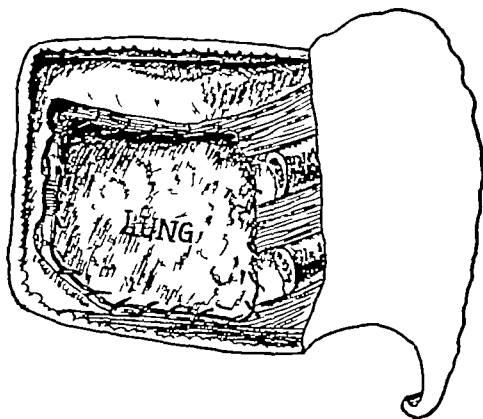


Fig 3 Means of repairing the defect in the chest wall. Lung is attached by means of a continuous suture interrupted at intervals. This provides for airtight closure of the pleural cavity and fixes the mediastinum.

ministered intravenously, the blood pressure may rise sufficiently to cause bleeding from the severed internal mammary vessels and death. This happened in one of our cases thirty-eight hours after operation.

The preoperative and postoperative intravenous administration of fluids requires careful consideration since the requirement for fluid varies. The cases may be divided into two main groups, (1) those with small loss of blood and (2) those nearly exsanguinated.

Not all cases of penetrating wounds of the heart are brought to the hospital exsanguinated. Occasionally the pericardial wound is rapidly closed after penetration so that only a few ounces of blood escape. The pericardial wound is closed by blood clot which forms in the pleuropericardial wall and closes the aperture very much after the manner of the shutter of a camera. Heart tamponade occurs and further loss of blood is impossible. This occurred in one of our patients. The laceration in the heart was repaired and immediately after the operation the patient seemed to be doing very well. It was not realized, however, that he had lost very little blood, since all our previous cases had come to the hospital almost exsanguinated. Blood and physiological saline solution were given intravenously to the extent of 3500 c.c. within an hour and a half after operation, and the patient died two hours after the operation. Post-mortem examination showed both lungs fully expanded, heavy, firm, and soggy because of diffuse edema apparently due to an overdose of intravenous fluid.

For patients who have lost a great deal of blood, fluids should be given freely by vein after cardiac repair. As much as 2000 to 2500 c.c. of physiological saline solution and 500 to 1000 c.c. of blood may be given within a few hours after the pericardium is opened and fluids may be continued intravenously at the rate of 3000 to 4000 c.c. per day. Transfusions may be

given on alternate days not only to overcome acute anemia but also to combat infection. It seems quite unlikely that even a sudden introduction of a large amount of fluid into the circulation can dislodge sutures in the heart muscle which have been properly placed and tied. The question of tying sutures in systole or diastole has proven in our experience to be purely academic, for practically one does not take notice of the phase of the heart beat.

It has been our practice to leave the laceration in the pericardium unsutured, with the purpose of allowing drainage from the pericardial sac into the pleural cavity. In one case observed by us the pericardium was tightly closed and an exudate occurred into the sac causing symptoms of heart tamponade and severe infection. With the evacuation of the exudate, however, the abnormal symptoms disappeared.

After hemorrhage, the most frequent cause of death is infection, pericarditis, mediastinitis, inflammation of the left pleural cavity, and sepsis. Combating this infection is a difficult task since no specific approach can be made. One should depend upon frequent transfusions and morphine. Morphine is very useful in these cases of infection because the patient exhibits an extreme motor and mental restlessness, thrashing about and attempting to leave the bed. Morphine gives the heart and, indeed, the entire body a much needed rest and allows energy to be used for repair instead of being expended in unnecessary psychomotor activity.

Summary

A case is described of successful suture of a penetrating stab wound of the heart and the surgical lessons learned in this and in other observed cases are presented.

1185 PARK AVE.

Reference

1. Connors and Stenbuck. *Annals of Surgery* p 528, April 1933.

THE OLD ARMY GAME

A little young thing entered a doctor's office. "Doc," she said, "I need an operation." "Major?" asked the doctor. "No," replied the girl, "Second Lieutenant."

—*Nebraska State Medical Journal*

INOPPORTUNE

Doctor "Have you told Mr. Cafoozalum that he is the father of twins?"

Nurse "No, he's shaving."

—*Nebraska State Medical Journal*

INJECTION OF VARICOSE VEINS DURING PREGNANCY

GOODE R CHEATHAM, M D AND ABEL E PECK, M D , *Endicott*

From the Obstetrical Department of Endicott-Johnson Medical Service and Ideal Hospital

Opposition to treatment of varicose veins of pregnancy is not new In 1579 Ambrose Pare¹ wrote, "Women with child are commonly troubled with them by reason of the heaping together of their suppressed menstrual evacuation It is best not to meddle with such as are inveterate for such being cured there is to be feared a reflux of blood to the noble parts whence there may be danger of malign ulcer, a cancer, madness or suffocation" Pigeaux² warned of a case of abortion in a cook following bandaging of varicose veins

De Lee³ states the dangers of varicosities during pregnancy as ulceration, phlebitis, emboli, and rupture with fatal hemorrhage, then adds under treatment, "Little can be done to cure bad cases of varicosities during pregnancy, but I have helped several cases by the administration of calcium"

Williams⁴ states, "Active treatment is useless in vulval varices but the danger of their rupture at the time of labor should be borne in mind"

This opposition to treatment is clearly illustrated by the fact that during the first nineteen months that we offered the injection method of treatment, we were able to treat only twenty-four cases, although during this period, we had 503 deliveries Either the patients themselves were opposed to treatment or had been advised by other physicians to postpone treatment until after delivery

This delay in applying an accepted method of treatment for nonpregnant patients to pregnant patients is typical of medical progress If we study the history of any medical or surgical advancement, we find that the pregnant woman is the last to receive its benefits For years no one dared do an appendectomy on a pregnant woman More recently the same was true of thyroidectomy, yet no one now hesitates when these procedures are

indicated The injection method of treating varicosities is going through the same process

The history of the injection method of treating varicose veins is too well known to need repeating It is today an accepted procedure The application of this method of treatment to varicosities of pregnancy is not so well-established or accepted hence a brief review of the application of this method of treatment to varicosities of pregnancy is not amiss

In March 1930 De Takats⁵ reported the successful treatment of six cases of varicosities of pregnancy and advocated further investigation and study

In September 1931 Hawk⁶ strongly advocated the injection of varicosities of pregnancy up to the six or seventh month

In October 1931 McPheeters⁷ reported forty-six cases of varicosities of pregnancy injected safely He concluded that it was a perfectly safe procedure and should be done when indicated

In January 1933 Kilbourne⁸ in a general discussion of varicose veins of pregnancy gives no personal experience but in discussing McPheeter's work states that he considers it safe and proper treatment during the fourth to seventh month of pregnancy

In April 1935 we⁹ submitted a preliminary report of twenty-four cases, treated safely This present report includes the entire series and including those twenty-four cases—all cases done from September 1933 to March of this year During this time we had 838 deliveries One of us (C) did the deliveries, the other (P) the injections Complications and results were observed individually and jointly

Before we began our series we reviewed the literature to try and find some real reason why pregnancy was considered a contraindication for injection by

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 28, 1936*

many physicians. We found none. Also all the reported fatalities which we found were patients who were confined to bed, therefore, we decided not to inject any patient during the last two weeks of pregnancy, not because of fear of the injection itself but because labor might begin and our patient be confined to bed. We reasoned that if it were safe to inject varices of pregnancy up to the seventh month, it was safe to inject up to term. Likewise if it were safe to inject nonpregnant varices above the knee, and one of us (P) had done many, it was also safe to inject varices of pregnancy above the knee. We have set no limitations on the size or location of the varix or the stage of pregnancy except the last two weeks for reasons previously given. No hyperthyroid, diabetic or cardiac was injected. Only true varices were injected. At first all varices were injected but after doing three superficial unimportant ones, the injections were limited to those varices which were causing pain or discomfort.

The technic was the usual technic of injecting any varicose veins. The deep circulation was always tested. Sodium morrhuate was used exclusively. The average injection was two and one-half to three c.c. The injections were given twice a week. The largest number given any patient was seven. The injections were begun at the ankle and extended upward. No bandage was used following injection and patients were urged to continue their normal routine. No treated patient was hospitalized longer than an untreated patient. As near as possible identical delivery and postpartum routine was used on treated and untreated cases.

Results

The entire series consists of forty-six cases in a series of 838 consecutive deliveries, forty-four were delivered, two undelivered. No treated case failed to be relieved. No treated patient had any postpartum complication of the circulatory system excepting one. One patient had a local reaction before delivery with no untoward results for mother or baby. One patient had postpartum phlebitis of the veins of the untreated leg while the treated leg had no phlebitis. The one patient mentioned above as having post-

partum circulatory complications is open to debate as to what part, if any, the injections had to do with her phlebitis.

This patient at about seven months was given one injection one afternoon and was admitted to the hospital the following morning with lobar pneumonia. She had quite a stormy illness developing empyema, she was operated three weeks after admission. Two weeks following operation she was delivered of a living infant, and was still under the oxygen tent at the time of delivery. Two weeks following delivery, she developed a phlebitis of the injected leg. This leg cleared and was promptly followed by phlebitis of the untreated leg. The lapse of time, seven weeks, from injection to development of phlebitis was so long that we did not feel that the phlebitis was due to the injection.

The case is reported however for we are equally as anxious to note any complications or contraindications to injection as we are to note benefits. One of our primary purposes in starting this series was to try and ascertain if there were any definite contraindications to the injection of varicose veins of pregnancy.

Our conclusions are based on the statements of the patients plus our clinical observation of the results. Each patient on completion of the treatment was asked this question, "If, now that you have had the treatment and know what it is like, you had the choice of keeping the veins or having the treatment, which would you choose?" Three chose the veins, the remainder the treatment.

Based on the patients' statements and our observations, we conclude that the injection of varicose veins of pregnancy is a safe procedure and that it gives relief in the vast majority of cases. This being true, we see no logical reason for postponing treatment until after delivery. Many of these patients were at least partially incapacitated. Why should treatment be withheld when they can be safely relieved by so simple a procedure as venous injection? Certainly in our hands, bandaging, rest, supportive stockings, etc. have been far from satisfactory in relieving the patient, and have accomplished nothing toward a cure.

It has been often said^o that varicosities decrease after delivery and hence should be injected then as a smaller clot will be

required to obliterate the veins. This is true but varicosities of pregnancy rarely, if ever, completely disappear following delivery. They always reappear and are progressively worse at each subsequent pregnancy. The prominence of the veins during pregnancy makes the procedure extremely simple and assures a complete obliteration of minute tributaries which would probably not be reached if done after delivery. It is during pregnancy that the symptoms occur, and after all, most of our patients come to us primarily for the prompt relief of symptoms. If this can be done with safety, they are entitled to relief.

Varicosities of the vulva deserve especial mention. They are far more dangerous than any others. We have had one fatality in our hospital, but not on our service, from the rupture of a varicosity at the time of delivery. These varices are amenable to only surgery or injection. Surgery is a far more complicated procedure requiring hospitalization. The

simplicity of the injection method of treatment and the fact that it is an office procedure strongly recommends it in preference to surgery. Our experience here is too limited for us to do more than give our results. We have injected two cases with bad varices of the vulva, and both were delivered. The veins were obliterated and there were no ill effects. Certainly this is worthy of further trial.

Conclusions

1 The injection method of treatment of varicose veins of pregnancy is a simple, safe procedure which gives better results than other methods of treatment.

2 It should be used during pregnancy in preference to waiting until after delivery.

3 Its use should be restricted to those varicosities which are causing discomfort or pain or those which may endanger the life of the patient at the time of delivery.

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Discussion

DR. HAROLD J. SHELLEY, *New York City*—It is true now as in the past that a generally accepted misconception as to the inadvisability of using a certain form of treatment has denied thousands of patients the benefits which would have accrued to those patients had they been allowed to receive what was later found to be a most useful form of treatment. This is the case with the injection treatment of varicose veins during pregnancy. For this reason Drs Cheatham and Peck are to be particularly congratulated for having demonstrated so conclusively by their figures that the injection of varicose veins during pregnancy is a safe procedure and that the results are most satisfactory.

Varicose veins are particularly troublesome during pregnancy. They can be, not only a source of great discomfort to these patients, but, indeed, often a cause of actual disability. Also their presence during and after delivery materially increases the patient's susceptibility to the development of

phlebitis. Therefore patients should be given the benefit of any form of treatment which will safely eradicate these veins during pregnancy. Injections, given by a properly qualified person, will eradicate these veins and will do it in a perfectly safe manner. Relief is obtained from the pain and disability caused by the lack of circulation in the varicose veins and the possibility of a phlebitis developing after delivery is greatly lessened.

For the past ten years I have never hesitated to inject varicose veins during pregnancy whether they cause symptoms or not, and I have never had any untoward results.

If the patients come to me early, I try to have all of the varicose veins obliterated by the end of the seventh month of their pregnancy. If the additional increase in the size of the uterus causes more varicose veins to appear after that time, I inject them, but time the injections so that none will be given closer than ten days to two

weeks before delivery The patients whose veins are being injected must be ambulatory

I have made it a rule never to use a quinine solution for the injections during pregnancy This may be an unnecessary precaution, as it would appear unlikely that the dose used, 0.266 gm of quinine hydrochloride twice a week, could have any action in starting contractions of the uterus

However, Edwards¹ has reported that he had one patient, three months pregnant, who bled after each of two injections of quinine and urethane The injections were discontinued and she went on to a normal completion of her pregnancy

He goes on to state that during pregnancy he injects only those veins giving troublesome symptoms or which appear dangerously near a rupture

For emphasis, I wish to repeat that I am firmly convinced that Doctors Cheatham and Peck have proven their case and that I agree with them heartily when they state

that the injection treatment of varicose veins during pregnancy is a safe procedure and gives good results I might even say that their conclusion is an understatement. I would say the injection of varicose veins should be done in pregnant women both for the relief of symptoms and as a prophylactic measure to prevent phlebitis following delivery

I should like to ask just one question of Drs Cheatham and Peck In the two cases in which they injected varicose veins in the vulva, were the thrombosed veins any hindrance to delivery by decreasing the elasticity of the tissues of the lower end of the birth canal? If not, their injection would certainly be of very great value because we all know the great probability of their rupture during delivery

DR CHEATHAM—The injected varicose veins of the vulva were no hindrance to delivery

Reference

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"SEVEN DEADLY SINS" OF CONTRACT PRACTICE

The "seven deadly sins" of contract practice of medicine have been listed by Dr Nunzio A Rini, acting chairman of the Kings County Medical Society's economic committee. These offenses against professional ethics he describes in the society's October 1936 bulletin

- 1—Solicitation of patients
- 2—Underbidding to secure a contract
- 3—Inadequate compensation to assure competent service.
- 4—Interference with reasonable competition in a community
- 5—Prevention of free choice of physicians
- 6—Making adequate treatment of patients impossible because of the physician's employment conditions
- 7—Fulfilling a contract which is in any way contrary to sound public policy

Discussing what's wrong with this method, Dr Rini points out

When anything alters the direct personal responsibility, confidence and personal interest between physician and patient, it tends to dilute and weaken the relationship

In private practice, the doctor builds his success upon satisfactorily fulfilling his obligation to the patient In contract practice his success depends more upon his affability and social relations with the employers who pay the bill There is always a breakdown in price which necessitates an overloading of work.

One of the greatest evils associated with the practice is the temptation for dishonesty and collusion between the doctor and patients in some instances, but more often between the employer and the doctor against the patient.

These abuses together with the inadequate compensation and degrading competition go hand in hand And the result is to lower standards of ethical medicine, the quality of medical service rendered deteriorating accordingly

WHEN LETTER WRITING IS DANGEROUS

Georgia doctors have been advised by the attorneys of their State Medical Association not to answer letters containing threats to sue for malpractice The doctor is always tempted in his reply to give a long, detailed account of the case, and to make statements which may cause trouble if the case comes to trial The lawyers know best how to

answer these letters so as to leave no loopholes for future trouble No matter how innocent of neglect a doctor may be, he may so word a letter as to give an opposing lawyer good material for damaging the doctor's case The members are advised to turn threatening letters over to the attorneys or the Committee on Medical Defense

PHYSICAL MEASURES IN PROCTOLOGY

R V GORSCH, M D, *New York City*

We have attempted in this short paper to offer a critical and unbiased review of physical measures in proctologic practice and incidentally to discuss the uses and abuses of electrosurgery, particularly in the surgery of hemorrhoids, and to present some new electrosurgical instruments for proctologic use

Diseases of the Colon

Constipation This subject has been fully dealt with in a recent article by Kovacs,¹ who stresses the importance of differentiating the atonic from the spastic type of constipation and individualizing the treatment. Physical measures—massage, electric muscle stimulation, exercise, diathermy, and water by mouth or rectum—are quite familiar to you

The greatest difficulty in these cases is, of course, the differential diagnosis between an organic and functional type of constipation and it seems pertinent to emphasize here that constipation is frequently enough caused by anal pathology—fissure, obstructive hemorrhoids, sphincter spasm, also by prolapse or intussusception of the sigmoid, adhesions of an inflammatory, postoperative or congenital nature, and finally by malignancy. It is therefore advisable that these patients be carefully proctoscoped and that a complete gastrointestinal x-ray series, and repeated stool examinations for blood and parasites be done before physical measures are used. It is worthy of repetition that the earliest symptom of colonic cancer is a change in bowel habit, and when constipation alternates with diarrhea, malignancy should be most carefully excluded. Less than fifty per cent of the cases of cancer of the colon are already inoperable when the diagnosis is made.

Chronic ulcerative and mucous colitis Many patients with chronic ulcerative and so-called mucous colitis have a neurasthenic background and the importance of psychogenic factors in the etiology and treatment of these serious conditions de-

serve greater consideration. Although of only minor therapeutic importance, abdominal diathermy, static wave current, ultraviolet irradiation, and other selected physical measures might prove useful for the comfort of these patients.

Fever therapy in the treatment of ulcerative colitis is at present under clinical investigation and there appears to be some evidence that it may prove of definite value. However, its exact status must be determined by a closer cooperation between the physiotherapist and proctologist who should check the effects of the treatments by frequent proctoscopic observation.

Tuberculous peritonitis, enteritis, and anorectal tuberculosis The great value of the ultraviolet light in the treatment of selected forms of tuberculosis seems well-established. It reduces the incidence of pain, cramping, diarrhea, nausea and vomiting, stimulates appetite, and prolongs life.

Space does not permit a detailed discussion of its application, however, it may be emphasized again that the therapeutic value of heliotherapy depends almost entirely on its general systemic effects and that local applications of light in tuberculosis is of little value.

The large carbon arc lamps using a current of at least twenty-five amperes seems to be preferred to the mercury vapor lamps.

The proctologist might well avail himself of the therapeutic value of heliotherapy both before and after operative procedures on patients with tuberculous fistulae, coccygeal, and sacral tuberculous involvement, and particularly anorectal tuberculous ulcerations which are notoriously resistant to all forms of therapy. Tuberculous involvement of the intestines and peritoneum should be watched for.

A course of general ultraviolet often has a salutary effect on sluggish perineal wounds and in selected cases, the x-rays may be cautiously used with marked benefit.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, April 29, 1936

Colon irrigation While colon irrigations were extensively used and widely exploited in the past for many conditions, including constipation, so-called mucous colitis, ulcerative colitis, and auto-intoxication, they are less popular today. There appears too many conflicting views concerning their value from recognized authoritative sources. This is unfortunate, since their use and abuse finds ready con-

From the strictly proctologic standpoint, we believe the value of colon irrigations has been much overrated and their sphere of usefulness is limited to selected cases in which there are manifest signs of obstruction or fecal impaction, or diarrhea with the retention of highly putrefactive products, particularly in the preoperative preparation.

We have been disappointed with the use of colonic irrigations in ulcerative and so-called mucous colitis and the variety of medicated solutions advised are, we believe, erroneously directed against bacteria in the wall of the gut which they can never reach. We employ them now, only in selected cases.

The misleading term high enema, should be abandoned since it provokes the ill-advised and erroneous, and sometimes harmful impression that the higher one inserts the tube, the more effective will be the result.

Diseases of the Anus and Rectum

Pruritus Ani Pruritus ani is still one of the unsolved proctologic problems, and included in the variety of measures advocated for its relief or cure we find several physical measures of which ultraviolet, x-ray, infrared, galvanism, diathermy, and high frequency sparking which have all been used with varying degree of success. All of these physical measures, particularly the ultraviolet light have been of questionable value and the majority of proctologists and dermatologists have not been favorably impressed with these measures. My own experience with the ultraviolet light has been rather disappointing. While the x-ray is frequently advocated for the treatment of pruritus ani, we are decidedly opposed to its use. In the simple cases of pruritus ani, warm wet dressings, hot sitz-baths, rectal lavage after bowel movement, and local

cleanliness are universally applicable and sometimes effective measures of relief.

In the severer types of pruritus, remote etiological factors are involved and it is important to protect both the patient and physician. If physical measures are used, it is essential that remote causative or associated conditions be not overlooked. On several occasions we have made the diagnosis of an unsuspected lues, the only symptom of which was a pruritus ani. This likewise applies to diabetes, tuberculosis, colitis, rectal constipation, malignancy, endocrine disturbances, and particularly the allergic diathesis.

The pruritus ani patient should therefore be handled by the proctologist, at least initially, and bearing in mind the great variety of causative factors, should receive a thorough and comprehensive investigation.

Stricture Medical diathermy if properly used is of considerable benefit in many cases of anorectal stricture, particularly those complicating lymphopathia venerea in colored females. It has undoubtedly saved many of these patients the ordeal of colostomy, has decreased rectal ulceration, discharge, secondary infectious processes, and has alleviated pain and tenesmus.

The important factors in the technique which deserve emphasis are, that an active hyperemia must be produced in the stricture area by prolonged high temperature to the point of tolerance, and that progressively increasing dilatation be carried out when the stricture has softened. The main objection of this form of treatment is that the treatments must be continued at regular intervals for an indefinite period.

The cases should be selected and carcinoma and multiple strictures ruled out by proctoscopy and barium enema.

Strictures of the rectum or sigmoid following x-ray or radium treatment of cervical carcinoma are advisedly not treated by diathermy.

Anal strictures usually respond to surgical treatment, however if this be contraindicated, diathermy may be helpful. Increasing sized metal Pratt dilators make suitable electrodes for the anal canal for the rectum, the simple straight graduated tubular electrodes devised by Frankfeldt are quite satisfactory.

Galvanism has also been used for rectal

stricture It appears to have no advantage over diathermy, particularly the short wave. The same applies to the use of carbon dioxide snow.

Hemorrhoids The application of physical measures in the treatment of hemorrhoids may be palliative or radical and the choice of method depends on the type of hemorrhoids, their clinical activity, the exciting cause, the associated pathology, and the physical status of the patient. It is not sufficiently appreciated that hemorrhoids, particularly the internal variety, are frequently secondary to remote pathological conditions as, cirrhosis, portal congestion, gastric and duodenal ulcer, prolapse of the sigmoid, enteroptosis, uterine and adnexal disease, prostatism, lues, and constipation. Associated cancer of the rectum is still overlooked or not suspected, and the treatment of hemorrhoids, frequently surgical, in about twenty per cent of the patients with palpable or proctoscopically visible cancers of the rectosigmoid speaks for itself.

Any form of treatment in any type of hemorrhoid without a careful sigmoidoscopic examination may be fraught with disaster and no proctologic diagnosis, particularly conditions associated with rectal bleeding, excludes a malignant or premalignant condition of the colon, and it is well to consider cancer until it is definitely ruled out.

Treatment In the early stages of hemorrhoids with no complications, little bleeding, and no prolapse, frequently associated with chronic constipation, medical diathermy may be used with satisfactory palliation. The results probably depend as much on the systematic dilatation as on the heat.

Internal hemorrhoids are occasionally complicated with strangulation, characterized by severe pain, sphincter spasm, edema, thrombosis, and lymphangitis with gangrenous ulceration. This constitutes the so-called attack of piles, and in this acute stage, surgery is advisedly contraindicated. Sepsis and exitus may well follow surgical invasion of a virulent infected field. Medical diathermy and high frequency are of great value in promoting resolution and alleviating pain and spasm in this condition.

The technic of anal diathermy and Oudin application is familiar and will not be discussed. Wet dressings, with some

form of heat and hot sitz-baths are additionally indicated physical measures.

External hemorrhoids are comparatively rare and usually follow labor, longstanding constipation, and portal congestion. Physical measures should be directed to these underlying conditions.

In external thrombotic hemorrhoids, medical diathermy has been used in both the single and multiple types as advised by Kobak who has fully described the technic.² The method is not popular since these small clots are readily removed by simple surgical excision under local infiltration anesthesia of novocain or anacaine. (A corona of multiple thrombi is frequently associated with the attack of piles which should be treated along palliative lines as already advocated.)

Electrosurgical Treatment

Desiccation—In the surgical treatment of hemorrhoids, the desiccating current is usually applied either by direct contact or by successively plunging the electrode tip into the substance of the hemorrhoid. Subsequent drying, shrinkage, and sloughing occurs depending on the strength of the current, the depth of its penetration, and the vascularity of the tissues. The hemorrhoid may also be grasped in a clamp after freeing its base, and the superimposed tissue either completely desiccated or partially excised, and the remaining stump desiccated. This is decidedly the preferable procedure and our observations and experience with electrosurgical technics have convinced us that desiccation over a clamp, combined however with a distal ligature, is the method of choice for those favoring electricity in the surgical treatment of hemorrhoids.

Coagulation—The coagulating current has been greatly abused in the surgery of hemorrhoids. Snare technic with this form of current deserves particular condemnation. Biterminal clamps designed to control the depth of coagulation often fail to do so and should be discarded. There are, moreover, simpler and safer methods of securing the same end result.

Cutting current—There is no place for the cutting current in the surgical treatment of any type of hemorrhoids.

Theoretically, electrosurgical methods would appear to be ideal in the treatment of hemorrhoids but actually, they are decidedly less satisfactory than a clean ligature operation. The vast majority of hemorrhoids requiring surgery are complicated by chronic submucosal infection,

Colon irrigation While colon irrigations were extensively used and widely exploited in the past for many conditions, including constipation, so-called mucous colitis, ulcerative colitis, and autointoxication, they are less popular today. There appears too many conflicting views concerning their value from recognized authoritative sources. This is unfortunate, since their use and abuse finds ready condonation.

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rectum is not fully understood. These functional aberrations are characterized by sensory disturbances of which attacks of pain, spasm, burning, itching, irritability, etc. are common complaints.

Several of these intractable cases follow rectal surgery in which excessive scarring persists in the anal canal. Reflex possibilities and psychogenic factors are important. It is frequently impossible to assign any causative demonstrable pathology, but organic pathology must be carefully ruled out and psychopathic examinations are advisable.

It would seem that physical measures should be of great value in these intractable cases and this is not sufficiently appreciated. Surgery usually aggravates their condition.

Rectal diathermy, abdominorectal, abdominovaginal or transpelvic diathermy may be used. For the psychic element, cabinet electric baths, ultraviolet radiation, static wave, and galvanic baths are useful in various combinations, sometimes with marked improvement.

Gonorrheal proctitis. Rectal gonorrhea is much more frequently associated with a genital infection of gonorrhea than is usually suspected. Fever therapy seems destined to play a very important part in the therapy of gonorrheal infections. Desjardins and his coworkers,⁴ who have had considerable experience in fever

therapy state that with improved methods, ninety to ninety-five per cent of patients can be cured of this noteworthy chronic infection. It appears that fever therapy will eventually supplant the instrumental methods with their complications. It is worthy of emphasis that a rectal gonorrheal cryptitis, may be an important focus for a most protracted gonorrheal arthritis. Fever therapy should be of particular value in these cases.

Summary

All the specialties are a part of medical practice. The proper status of physical measures in proctologic practice must eventually evolve from a closer cooperation of physiotherapist and proctologist who at present has assumed a quiescent attitude toward physical measures. Electrosurgery is much used and much abused by both physiotherapist and proctologist. We have attempted to emphasize some of its indications and contraindications in proctologic practice and to place it on a firmer scientific basis.

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Discussion

DR. F. LESLIE SULLIVAN, *Scotia*—Dr. Gorsch has given us a very comprehensive and complete survey of physical measures used in proctology. I may offer this conclusion however, that the use of physical measures is the exception rather than the rule. I do not believe that the majority of proctologists deliberately neglect them but rather have found that their inadequacy in many conditions deny their use. In many instances, however, inaccurate knowledge of management of physiotherapeutic details cause their improper application and subsequent failure.

In chronic constipation, the value of exercise for the abdominal muscles, massage, the use of fluids by mouth and rectum are well-known, provided of course, that the cause is entirely functional. It is a well-known fact that all too often the physician has advised physical measures in the presence of a carcinoma of the colon or some other pathological condition. All organic

conditions must be first ruled out by a careful history, procto-sigmoidoscopic and fluoroscopic examinations.

Concerning bowel function, I cannot too highly evaluate a thorough fluoroscopic examination which will give the proctologist a mental picture of the function of the bowel in question, as well as rule out any organic condition.

At the Ellis Hospital (Schenectady) cases of unstable, irritable or spastic colon are treated by bowel management. We remove, as much as possible all environmental factors and give the patient mental and physical rest. They are put to bed and given a non-roughage diet. We avoid enemas of any nature and encourage the patient to establish a habit of daily bowel movement. The only fluids used are, at times a little warm olive-oil in the rectum or retention of three or four ounces of warm water, or, these failing, a pint of water into the area of defecation, slowly.

sphincter spasm, fissures, large skin tags, infected crypts, enlarged papillae, and prolapsing mucosa. Removal of these pathological changes with proper drainage frequently constitutes the more important part of the hemorrhoidectomy. We are decidedly opposed to the so-called office or ambulatory hemorrhoidectomy. If electro-surgical methods are used, the cases should be carefully selected, and at best, they are suitable only for the uncomplicated case of internal hemorrhoids.

Galvanism in hemorrhoids—The galvanic current which supposedly produces an electrochemical caustic action in the hemorrhoid has been used for many years. We have had but little experience with galvanism and have long since discarded it because of the number of uncontrollable and variable factors in the technic, further, because it is only applicable to a selected group of uncomplicated cases of surgical hemorrhoids. The time consumed, the necessity for an exact placing of the needle electrode, the duration of the individual treatments, the exact milliamperage, the extent of the caustic reaction—are all arbitrary and variable factors. Furthermore one must appreciate that many hemorrhoids have a considerable degree of interstitial fibrous changes and it would seem quite difficult to determine the exact point to which the destructive action of this current should be carried. One must further appreciate that it produces a necrosis of tissue in an already infected field and its results depend on a slough of tissue which is not predictable within safe limits.

The injection treatment with its limitations, requiring no special apparatus and with better controlled factors is a safer and preferable nonsurgical method.

Among other physical measures, the use of radium or x-ray in the treatment of hemorrhoids is an entirely irrational and dangerous procedure. It marks the height of fadism in an already variegated treatment of hemorrhoids.

Fissure in ano Simple uncomplicated fissures may be treated by diathermy. Relief sometimes follows the complete desiccation of the surface of the fissure with the Oudin current. Coagulation should never be used. The method requires complete anesthesia and dilatation for free drainage and sphincter rest which are essential in the aftercare. In the radical treatment of fissure, if the sphincter muscles are divided the incisions are preferably made with the cold scalpel, since

muscle tissue almost fades away under the electric knife.

Fistula in ano Physical measures play a minor role in anorectal fistula. Ionic medication has been used but is of questionable value. The x-ray has been highly recommended by Bensaude⁸ of Paris. In extensive fistulae with multiple openings, it may perhaps be of some value. We have had no experience with the x-rays in fistula and the method does not appear to be very popular in the United States. It has obvious limitations around the genitalia.

In the surgical treatment the cutting current would theoretically appear to offer decided advantages in the excision or incision of fistulae. However, in our experience, the electrified knife cuts with such rapidity that it is difficult to judge whether one is cutting through diseased or normal tissue, a most important consideration for good fistula surgery. We still find the scalpel the most sensitive effective weapon for this type of surgery. Moreover the dissection of tracts close to the rectal wall with the cutting current is done with considerable risk of immediate and remote perforation. The actual cautery is preferred by some in the tuberculous variety of fistula when this can be determined beforehand.

Coccygodynia The exact etiological basis for this condition is not always clear. The majority of cases fall into a traumatic and nontraumatic group, frequently on a neurogenic basis. The traumatic group may be greatly benefitted by rectoabdominal, rectosacral or transpelvic diathermy as indicated.

The nontraumatic group are more often benefitted by the injection of alcohol or anucaine, which also is a sort of therapeutic test for definitely reflex pathways.

Surgery is frequently disappointing and it should be preferably used only after a thorough trial of diathermy and other physical measures.

Neuralgia, hysteria of the rectum, etc (Rectal phobia, sphincteralgia, sphincterismus, and anal cramp). This collection of terms refers to a group of ill-defined conditions, usually functional, which manifest themselves primarily through the neuromuscular apparatus of the anorectal region. They are not all well-understood, in fact, the innervation of the anus and

cautery, the fulgurating snare, dessication, and coagulation have their place and are of great value if used by operators acquainted with their use. The use of galvanism or ionization, electrocoagulation or electrodesiccation I believe have no value in the treatment of hemorrhoids. The operation for cure of hemorrhoids is perfectly simple and need not be greatly elaborated. The simple fixation and ligation operation in our hands has served all purposes, with a comfortable, thankful patient.

We have found that coagulation and fulgeration is of great value in inoperable malignancies of the rectum and sigmoid. It is a palliative measure and may be used at the time of introduction of gold wire or of platinum filtered radium seeds. Very frequently care of this nature under trained hands will keep a patient comfortable, free from obstruction, and alive for several years.

Two years ago at a New York institute, I examined an elderly man who had a low-lying inoperable malignancy. He was treated with radium at that time and once since. On various occasions the growth was coagulated. I was agreeably surprised when I saw him two weeks ago looking quite well. He had lost very little weight, had had no bleeding, and very little pain. This man will succumb eventually to this second greatest cause of death but due to these physical measures the interval of his life's span has been lengthened, and made more comfortable and more happy.

DR. JOHN C. M. BRUST, *Syracuse*—It has been a real pleasure for me to hear Dr. Gorsch, and particularly so, since he has wisely adopted a very conservative attitude. It is probable that no portion of the anatomy of the American public has been more grossly exploited by charlatans than the lower large bowel and rectum.

With increasing knowledge of the usefulness of physical therapeutic measures, certain diseased conditions requiring the care of a proctologist may be treated in a more conservative manner. I refer particularly to adenomatous polyps of the sigmoid and rectum. As you well know, many, if not most of these adenomas, appear benign when viewed through a sigmoidoscope. They may be pedunculated or sessile, they vary greatly in size, color, and shape, they may or may not produce symptoms. Yet, certain facts stand out most alarmingly to one who has exhaustively studied the histologic pathology of these supposedly benign growths. If one carefully sections a large

series of these adenomas, small areas of early and low grade malignancy will frequently be discovered. When seen, thus metaplasia or early frank adenocarcinoma will almost always be toward the periphery of the polyp.

With such facts in mind we can do little else but strongly urge the destruction or removal of such growths. I know of no safer, more complete or more economical method than by the use of electrofulguration through a sigmoidoscope. It is painless and no anesthesia is needed. Bleeding is rare and can be quickly controlled by "retouching" the bleeding point with the fulgurating spark. One should of course be dexterous with the sigmoidoscope itself. It is probably best to begin the fulguration at the tip of the polyp rather than through the base or pedicle. By so doing, the peripheral malignancy if present will be destroyed immediately and bleeding is less likely to occur.

Of course when the growth is located above the line of peritoneal reflection more care is needed in applying the electrode. It is frequently advisable to destroy such high growths in stages.

This field of therapy has been recently encouraged by the work of Strauss of Chicago who is attacking outright carcinomas by fulguration. It is possible to criticize such conservative methods in a malignant lesion which is felt to require most radical extirpation. His figures are encouraging however, and I have no doubt that a new avenue of attack on malignancy of the rectum has been opened up.

I have within the past year treated three patients of middle age who had developed rather extensive though localized areas of polyposis within the rectum. Two of these persons are completely free of any rectal polyps at the present time and one is still being fulgurated two or three times weekly. I am happy that I have saved them from colostomy and a serious surgical operation with its attending high mortality.

DR. HANS J. BEHREND, *New York City*—May I use this opportunity to mention a physical measure of postoperative treatment of hemorrhoids which has become routine in the Hospital for Joint Diseases on the service of the Proctologist Dr. Harry Goldman. It has been a great problem to relieve the anal spasm and edema which develop after the operation. Hot compresses and the sitz-bath were previously used. As in my experience the soothing and healing effect of the steam jet in treating chronic and indolent ulcers has been conclusively demonstrated, I suggested its use for the postoperative management of hemorrhoids.

introduced, and held as long as possible. Other medications are given appropriate to the patient.

There are many and conflicting opinions as to the value of the colon irrigation or lavage. Barger and many other experts in this field of work believe that colon irrigations are contraindicated in mucous colitis and ulcerative colitis. While Bastedo states that colonic irrigations are indicated "in chronic states of the bowel, such as are encountered in 'mucous colitis,' intestinal putrefactive toxemia, and in cases in which a focus of infection is believed to reside in the bowel, as in certain cases of rheumatism, neuritis, secondary anemia, and sundry run-down conditions."

This field of work has been greatly exploited by charlatans, quacks, and lay people, and in many cases, unfortunately, men in our profession. The irrigation of the bowel, as has been frequently done, should not be a matter of routine administration but should be used in *selected* cases only for a definite purpose.

The saline wash either as a rectal wash or cleansing enema has a definite place in therapeutic procedure. It is valuable in cases of edema of the bowel associated with mucous colitis. It is valuable as a cleansing agent. In cases of pruritis and due to mucoid rectal discharge, with or without fecal retention, it is helpful as a rectal wash. It should be used as a normal 8 solution or in cases of edema and diarrhea in mucous colitis as a hypertonic solution. Irrigations *per se* have been used in many and varied ways. Lockhart-Mummery believes that in chronic ulcerative colitis an appendectomy should be performed early and washing started immediately. This is done through a catheter held in the appendectomy with a rectal tube in place. I agree with Cattell that in the *majority* of cases of purulent colitis, a thorough washing with an enema can be done through the rectum and is sufficient as an irrigation.

The use of diathermy in lymphopathic strictures associated with ulceration is beneficial. In simple inflammatory strictures of the rectum of longstanding, diathermy is of questionable value, unless the stricture is associated with ulceration. The use of a Hegar uterine dilator, sizes eight to twenty-five, frequently gives these cases good function. If associated with tenesmus and straining, ulceration bleeding and backache, a colostomy may mean the only relief. Internal proctotomy by cutting current in mid-rectal or high-rectal strictures is always a delicate procedure. I

prefer using a knife in these locations to better avoid hemorrhage due to slough or rapid cutting.

While on the subject of dilators, I might add this. I formerly used dilators following the excision of fissures according to Gabriel's technic, but have discontinued their use because I believe that the continual irritation of a healing field gives a fibroplastic exudate which gives in turn a hard scar. This in itself is easily cracked giving a recurrence of the original trouble. Without the use of a dilator, I believe that we get a more elastic scar with less aptness to recurrence.

In hemorrhoids in the acute stage, dilation, reduction, wet dressing, and hot sitz-baths are the proper procedure—to be followed by surgical removal in the chronic stage. Diathermy, etc., are palliative measures which may give some relief to the cases who wish to avoid surgery or injection, provided these are not cases of late 2° internal or 3° internal hemorrhoids.

In anorectal neuroses, granted that the diagnosis has been definitely established, physiotherapy as a psychotherapeutic agent plays an important part. Here, as in other forms of neuroses, environmental conditions are a large factor and treatment must be directed toward the removal of all external and constitutional causes.

In gonorrheal proctitis, many cases may be cured by properly instituted care—cleansing douches, two or three times daily with medicated solutions, and the careful inspection and treatment of the rectum and anorectal region about every five days in the office. Fever therapy has enjoyed a great popularity in proctitis as well as urethritis but I believe that the above will clear up most cases if thorough. Many cases of gonorrheal proctitis become chronic due to a gonorrheal cryptitis. I have followed the technic of Curtice Rosser in this respect with good results. In cases with continued discharge, most of the pathology will be found in the anal valves. If the cover of the crypt is lifted and gently irrigated by means of a specially adapted crypt irrigator with a mild solution of silver nitrate, most of these will be cured.

Fever therapy has been given a very thorough trial at the Ellis Hospital in conjunction with the Research Department of the General Electric Company and the following conclusion reached that it is of great benefit in gonorrheal arthritis and paresis. It may be of great value in gonorrheal proctitis.

Electrosurgery has a definite and valuable place in proctology. The use of the

PRESENT STATUS AND TECHNIC OF TUBERCULIN TESTING

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State Department of Health

In the past, the numerous methods of administering tuberculin tests coupled with the employment of tuberculins of varying potency, precluded accurate comparison of results obtained in different sections of the country. After much experimentation, it was agreed that the Mantoux technic of employing tuberculin is to be preferred above other methods, in that it permits the use of a known quantity of tuberculin. However, it was not until 1932 that the inherent difficulties of preparing a standard tuberculin of known potency were overcome. In that year, Seibert and Munday¹ described a most satisfactory and practical method for isolating the active principle responsible for the tuberculin skin reaction. The discovery of this substance filled the long-felt need for a standard tuberculin and provided a uniform measuring rod for evaluating results of tuberculin testing programs.

The essential steps leading to the preparation of this principle² are

- 1 Growth of tubercle bacilli on a protein free synthetic medium
- 2 Preparation of old tuberculin from this synthetic medium (SOT)
- 3 Concentration and removal of impurities from this synthetic old tuberculin (SOT)
- 4 Precipitation of the active principle, purified protein derivative, (PPD) by trichloroacetic acid
- 5 Removal of the acid with ether, resulting in a simultaneous dehydration of the protein derivative to powdered form

Commercially, PPD is dispensed in sterile lactose tablets of varying strengths, with suitable amounts of a special sterile diluting fluid in which to dissolve them. Dilutions of PPD have the advantage over OT dilutions, in that they are free of non-specific proteins and salts.

The National Tuberculosis Association has recommended that PPD be used in a two dose technic.³ Employing the Mantoux method, 0.1 c.c. of solution contain-

ing 0.0002 mgm PPD is injected as an initial dose. The test is read forty-eight hours later and nonreactors to the initial dose are injected with 0.1 c.c. of solution containing 0.05 mgm of PPD which is two hundred fifty times as strong as the initial dose. The two dose technic is inconvenient for the patient and the physician but no satisfactory dilution of PPD has as yet been determined which will meet all the requirements for a single dose method.

Itinerant chest clinics of the New York State Department of Health, Division of Tuberculosis, are operated throughout upstate New York, and visit communities for brief stays, usually one day. Because of the limited time in which the clinic remained in any community, it was felt that a two dose technic of PPD could not be employed routinely. Accordingly, discussions were entered into with Doctors Long and Siebert of the Phipps Institute regarding the feasibility of employing a one dose technic for PPD testing. It was agreed that a study of this type would be worth while, and arrangements were made so that all those who requested the test would be given 0.01 mgm of PPD by the Mantoux technic, i.e., one-fifth of the regular second dose. It was felt that this dilution was of sufficient strength to elicit a positive response in all but five per cent of possible reactors. The dilution was freshly prepared twenty minutes before each clinic, by dissolving one standard second dose tablet of PPD in five c.c. of diluent. The reactions were read at the end of forty-eight hours by clinic physicians who had administered the test.

The system of grading the reactions was that recommended in "Diagnostic Aids"⁴ by the National Tuberculosis Association.

A positive reaction is one which shows edema and redness at the end of forty-eight hours. If there is no edema, the reaction is regarded as negative. Reactions

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, April 29, 1936*

The steam jet is an apparatus in which steam at a suitable temperature flows from a nozzle of a movable hose. The usual pressure of the steam is about three or four pounds and the temperature at the skin has been measured to be about 102° F. After the first treatment of fifteen to twenty minutes on the first postoperative day, the patient felt immediate relief. The edema rapidly diminished during the treatment and was considerably relieved after it. The

spasm also was greatly lessened. The patient received one to two treatments daily.

We have treated nine cases so far without failure, and suggest this method not only for the effects mentioned above but because it was also observed that under this treatment, the use of narcotics could be greatly reduced. Another extremely desirable result which we observed was the ease with which the patient was able to void

SPATTERING THE FOE WITH DISEASE GERMS

Among other pleasant and playful plans in pickle for the "next war" is the reported scheme to rain disease germs down in a ghastly shower on enemy cities. Biological laboratories are to work in day and night shifts filling bottles with bacilli that will cause men, women and little babies to expire in agony.

Right here, however, arises the question whether the hail of germs will come up to expectations. Will the much-touted bacilli do the job as advertised? Perhaps not, it appears. Theoretically, writes the Belgian correspondent of the *Medical Record*, there seems to be no reason why any epidemic may not be started with a large supply of virulent germs. However, practice does not seem to follow in theory's wake. When the civilized world was frightened enough by these germ-war rumors, the League of Nations thought it best to ask the advice on this subject of the most outstanding scientists whose authority in this matter is paramount. Accordingly, Bordet of Brussels University, Pfeiffer of Breslau, Cannon of Harvard University, and Madsen of Copenhagen were charged by the Geneva body to investigate and report upon the possibilities of germs as war weapons. After a long study, and after numerous conferences, investigations, and most scientific research, this "Germ-War-Committee" presented a report whose conclusions are condensed as follows by *Minerva Medica*:

1 No definite statement can be made regarding the effects of germs as a war weapon in any given locality, as changing factors may influence such effects.

2 The use of cultures of typhoid fever and Asiatic cholera germs can easily be made harmless by filtration or boiling of all drinking waters.

3 The spread of bubonic plague by means of rats is dangerous, not only for the attacked but for the attacker as well, moreover, plague epidemics can be controlled and localized.

4 The danger of spreading exanthematous typhus by means of lice infected with Rickettsia

prowazeki is much exaggerated, the most elementary rules of hygiene will easily eliminate the disease.

5 No attacker can reckon on the effectivity of germs as a weapon, as our knowledge of preventive medicine and microbiology are advanced enough to enable us to limit the extension of the infection.

The report does not deny the possibility of a germ war, but stresses the fact that once started, such a war can be controlled. It is agreed in all medical circles that hygiene and preventive measures have taught us enough to know how to handle any epidemic, no matter where started.

Not all germs are suited for warfare. Only such germs as will produce general septicemias and toxemias have been placed on the list as "enemy number one." The plague germ has been considered as suitable because it resists well desiccation and humidity, it can be kept alive a long time, is active, easily cultured, and virulent. On the other hand, modern sanitary history shows that whenever a plague epidemic broke out, it was soon stopped.

No doubt the most-to-be-feared germs are those producing the so-called tropical diseases, but the war lords are rather handicapped in this respect, as these germs act, comparatively speaking, slowly, and "tempo," "speed," "surprise," are watch words in modern warfare. Besides, the white man is immune to some of these fevers, while most of these germs require a specific climate with a suitable milieu.

Another question which has not yet been answered fully is the following: Is the laboratory-raised germ as active as the one developed in the animal body? Even Pasteur had his doubts in this matter.

If it be admitted that many laboratories in the world concentrate on plans and means for a future germ war, it must also stand out clearly that many more laboratories, and many more workers are producing means for fighting such diseases.

primary tuberculous infection, which apparently at the time of examination was of no clinical significance

3 Healed primary tuberculosis Those individuals with negative physical findings, who on x-ray revealed calcification either in the parenchyma of the lungs, the draining lymph nodes, or both

There were 269 individuals who revealed x-ray evidence of tuberculous infection of various degrees of significance, as follows

1 Thirty-two active cases of pulmonary tuberculosis, thirty-one of whom reacted positively

2 Six cases of healed tuberculosis, all of whom reacted positively

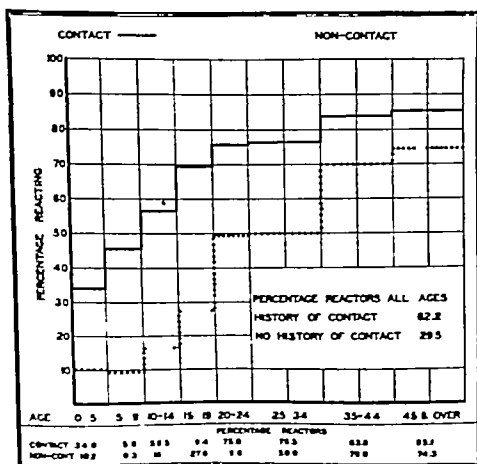
3 231 cases of healed primary tuberculosis, 221 of whom reacted positively

The failure of one clinical case of tuberculosis and ten cases of healed primary tuberculosis to react positively to the test, is not explained. The opportunity to retest these individuals did not present itself and we are unable to state whether failure to react was due to errors of technic or energy. It is significant however, that 95.9 per cent of the patients showing evidence of tuberculous infection reacted positively to the

TABLE III—ANALYSIS OF INDIVIDUALS WITH ABNORMAL X-RAY FINDINGS ACCORDING TO PPD REACTION, AGE, CONTACT STATUS, AND DIAGNOSIS

Age		Pulmonary tuberculosis		Healed tuberculosis		Healed primary tuberculosis	
		Tested	Reactors	Tested	Reactors	Tested	Reactors
0-9	Contacts					33	32
	Noncontacts					2	2
	Total	2	2			35	34
10-19	Contacts	6	6	1	1	99	98
	Noncontacts	1	1			14	12
	Total	7	7	1	1	113	110
20 and over	Contacts	11	11	4	4	52	48
	Noncontacts	12	11	1	1	31	29
	Total	23	22	5	5	83	77
Grand Total	Contacts	19	19	5	5	184	178
	Noncontacts	13	12	1	1	47	43
	Total	32	31	6	6	231	221

CHART I—PERCENTAGE REACTING TO PPD BY CONTACT AND AGE GROUP (STATE CLINIC-1935)



New York State Dept. of Health Div. of Tuberculosis, E.B.B.

test, and that of the 3,029 individuals tested, in only one instance did the test fail to detect the presence of infection of clinical significance, i.e., the case of pulmonary tuberculosis which did not react

There were nineteen cases of clinical tuberculosis discovered in the contact group and thirteen discovered in the non-contact group. The cases of healed tuberculosis in the contact group outnumbered those in the noncontact group 5:1. Of those showing evidence of healed primary tuberculosis, 79.7 per cent were found in the contact group.

TABLE IV—REACTIONS IN CASES OF PULMONARY TUBERCULOSIS

	Total	Minimal	Mod	Adv	Far Adv
Negative	1	0	1	0	0
One plus	7	2	3	2	0
Two plus	12	11	0	1	0
Three plus	9	8	1	0	0
Four plus	3	2	0	1	0

are arbitrarily graded from one (+) to four (++++) plus

A + reaction is one with slight but definite edema (not more than ten mm raised about one mm), the area of redness, which is less important, is usually larger

A ++ reaction is one with well-defined edema (ten to fifteen mm. across, raised somewhat more than one mm) and an area of redness which is usually larger than the area of edema

A +++ reaction is one with extensive edema (measuring more than fifteen mm and raised more than two mm) with a wide area of redness, but with no necrosis of the skin. Redness in a few instances extends along a lymphatic

TABLE I

Patients examined	3,029
Males examined	1,410
Females examined	1,619
Positive reactors (48.9%)	1,480
Positive reactors, males (48.8%)	688
Positive reactors, females (49%)	792

TABLE II

	History of contact	No history of contact
Individuals tested	1,793	1,236
Individuals reacting	1,115 (62.2%)	365 (29.5%)
Negative reactors	678 (37.8%)	871 (70.5%)
1 + reactors	286 (15.9%)	125 (10.1%)
2 + reactors	389 (21.7%)	136 (11.0%)
3 + reactors	391 (16.2%)	68 (5.5%)
4 + reactors	149 (8.3%)	36 (2.9%)

A ++++ reaction is a reaction characterized by extensive edema, redness and a spot of necrosis. It may be associated with elevation of temperature and malaise

In addition to the tuberculin test, each clinic patient had a careful history taken, followed by a physical examination of the chest and a single roentgenogram thereof

There were 3,029 individuals tested by this one dose technic (Table I). Females predominated slightly, 1,619 to 1,410, a total of 1,480 patients (48.9%) reacted positively, i.e., 48.8% of the males (688) and forty-nine per cent of the females (792). The high percentage of positive reactors can be explained by the fact that most of the patients were examined because of a history of contact with a known case of tuberculosis or had been referred by local physicians because of symptoms referable to the chest.

Analyzing the group on the basis of contact with a known case of tuberculosis

it is found, that 1,793 individuals had had such contact and 1,236 had had no known contact. There were 801 males and 992 females in the contact group, while the non-contact group was composed of 609 males and 627 females. The ages range from one year to seventy-two years, the majority (92.9%) of the individuals being less than thirty-five years of age.

In the contact group, 1,115 individuals (62.19%) reacted positively. Table II presents a study of this group by degree of reaction. There were 149 individuals with 4+ reactions, i.e., 8.3 per cent of all contacts or 13.36 per cent of all reactors in the contact group. There were no significant differences observed in the incidence of reactions obtained in the males (63%) and the females (61.5%) of the contact group.

In the group having no history of contact, 365 individuals (29.5%) reacted positively. The analysis of the positive reactors in the non-contact group reveals that 9.86% of the positive reactors gave 4+ reactions. As with the contacts, there were no significant differences observed in the incidence of reactions obtained in the males (30.05%) and the females (29.03%) of this group.

When the reactors of the contact and noncontact group are studied by age it is found, that the contact group presents a much higher incidence in each age subdivision studied (Chart I). The resulting infection with the tubercle bacillus incident to exposure to known cases of tuberculosis is evident throughout the contact group, beginning with the high percentage of reactors (33.9%) in the 0-4 age period, and increasing steadily in the succeeding age groups, reaching a percentage of 76.47 in the 25-34 age period.

We were particularly interested in studying the incidence and severity of reactions in those individuals who presented evidence of tuberculosis. These patients in whom a diagnosis of tuberculosis was made, fall into three groups (Table III).

1 *Pulmonary tuberculosis* Individuals who on x-ray, with or without laboratory or physical findings, showed evidence of pulmonary disease of clinical import.

2 *Healed tuberculosis* Individuals who from x-ray, history, and physical examination, revealed evidence of a healed post-

Discussion

DR. EUGENE W. BOGARDUS, *White Plains*—We can all agree that the Mantoux test is the accepted method of tuberculin testing. We can also agree that tuberculin PPD is the best agent to use. Tuberculin PPD is a standard product of known strength giving accurate readings and a moderate skin reaction. The only disadvantages are the necessity of using two doses and the expense when used on small groups. Dr. Deegan has given us an interesting description of the findings of over three thousand tuberculin tests made on persons of all ages in the New York State Health Department Clinic Service. No information has been given, however, as to the relative distribution of these individuals in the various age groups, except to note that ninety-two per cent of them are under thirty-five years of age. The material would be more useful if we knew what age groups constituted the bulk of the cases. It would also be interesting to know in what age groups the active cases of pulmonary tuberculosis were found.

Concerning the degree of tuberculin reaction, it has been our experience as well as that of others that tuberculin reactions in positive cases have no relationship to the activity of the disease. However, we have observed two facts in regard to tuberculin positive but otherwise healthy children. *First*, that 4+ reactions are more apt to occur in rural groups. *Second*, that a 4+ reaction in a healthy child means recent exposure to tubercle bacilli. In our rural groups we have found a number of cases with 4+ tuberculin reaction and no apparent source of infection in the family. Investigation of the milk supply of these families revealed a number who were using raw milk. A check of the herds from which the milk supply was derived revealed bovine tuberculosis. We believe that it is worthwhile to investigate the milk supply where we have 4+ tuberculin reactions in children with no apparent source of human infection.

Concerning the dosage of tuberculin used, we have used 1/10 milligram of old tuberculin for the initial dose followed by one milligram if the first dose is negative. Our use of tuberculin PPD has followed the directions furnished by the National Tuberculosis Association. However, we have recently been experimenting with a dose one half as strong as that used by Dr. Deegan. We make up the solution by dissolving one of the second dose tablets in ten c.c. of diluent. In all cases where contact is known to exist in the home, we use

a smaller dose for the initial dose. In approximately ten thousand tuberculin tests which have been made, we have had no difficulty with positive reactions.

Dr. Deegan states in his survey that 50 per cent more cases of pulmonary tuberculosis were found in contacts than in non-contacts. If we analyse his figures however, it is apparent that he examined fifty per cent more contacts than noncontacts. Placing the contact group against the noncontact group and comparing the number of cases of tuberculosis found in each group, we arrive at these figures: 1793 contacts yield nineteen cases of tuberculosis or 1.06 per cent, 1232 noncontacts yield thirteen cases of tuberculosis or 1.05 per cent which is almost exactly the same incidence of tuberculosis as that of the contact group. Dr. Deegan states that 48.5 per cent of his contact group reacted positively to tuberculin whereas only twenty-nine per cent of the noncontact group reacted to tuberculin. If we apply the rate of tuberculosis and the rate of tuberculin reaction to groups of one thousand contacts and one thousand noncontacts we would get the following expectation of result. One thousand contacts would yield 485 reactors among whom would be ten cases of pulmonary tuberculosis, one thousand noncontacts would yield 290 tuberculin reactions among whom would be ten cases of pulmonary tuberculosis. If we were to proceed in a group of this size with the usual method of x-raying only the positive reactors, we would find the same amount of tuberculosis in a noncontact group at one half the expense of examining a contact group.

There is one point in dealing with the active pulmonary cases which must be borne in mind. Four of the cases listed by Dr. Deegan are under ten years of age. It is stated that a diagnosis was made after one tuberculin test, one physical examination, and one x-ray. It has been our experience that a diagnosis of pulmonary tuberculosis in a child under fifteen years of age cannot be made without further study. Many lesions prove to be shadows due to nontuberculous respiratory disease or to primary tuberculous infection. In our clinic service, we have found but one case of pulmonary tuberculosis in a child under fifteen.

The cases which Dr. Deegan classified as healed pulmonary tuberculosis are too small in both the noncontact and contact group to permit comparative analysis.

An interesting notation regarding the childhood lesions discovered is that while the childhood infections predominate in

The degrees of reaction obtained in the positive cases of pulmonary tuberculosis are indicated in Table IV

Discussion

The tuberculin test is a potent aid in the study of the epidemiology of tuberculosis. Its major role is that of a "screen" in surveys of groups of individuals, the nonreactors to the test being regarded as free of tuberculous infection. Too often our efforts in surveys of this sort stop with x-raying the chests of the reactors and no attempt is made to determine the source of the infection. It is particularly important from an epidemiological standpoint, that the sources of infection be discovered, the contact broken, and the source case be afforded the benefits of treatment. Few, if any, tuberculin surveys should be attempted unless sufficient funds and personnel are available to investigate the contacts of the positive reactors. The younger the age of the reactor, the more important it is to determine the source of the infection. Should funds not be available for this follow-up procedure for the entire group to be studied, the scope of the effort should be limited in order that worth-while results might be obtained in the homes of the reactors. As a result of careful analyses, we are coming to regard tuberculosis as a disease which is frequently endemic in certain families rather than a scourge of the entire community.⁷

The appeal of tuberculin testing programs in schools can be attributed to the desire of the populace to protect the children from disease. This method usually results in the discovery of less than one per cent of clinical tuberculosis⁶ and proves to be an expensive method of case finding. However, the average citizen is usually satisfied with the school demonstration and is unmindful of the necessity of tracing the source of the infection. Rather than expending money on a program which goes no further than x-raying the reactor, our case finding funds could more advantageously be spent in studying those groups in which the morbidity and mortality rates of tuberculosis are known to be high. In any tuberculosis control program, examination of the contacts is second in importance only to the care of the known case.

Summary

A study of a one dose method of employing PPD in a strength of 001 mgm was made on 3,029 patients attending the clinics operated by the Tuberculosis Division of the New York State Department of Health. Of those who presented evidence of tuberculous infection, 95.9 per cent reacted positively to the test. Among the 3,029 individuals tested, there were eleven instances where the x-ray revealed evidence of tuberculous infection, and in whom the test was negative. Positive reactions were obtained in 1,480 (48.9%) individuals. The number of 4+ reactions obtained by this method was high, i.e., 185 individuals or 12.5 per cent of all reactors. It is interesting in this connection to note the results of a comparative study of OT and 1 PD made by the Division of Tuberculosis, New York State Department of Health in 1,747 patients of the Newark State School which was reported at the 1936 meeting of the National Tuberculosis Association in New Orleans. As part of the study, a dosage of 0005 mgm PPD was employed and it was concluded that this strength dose might be productive of too many 4+ reactions.

Conclusion

As a result of studies conducted by the Division of Tuberculosis, New York State Department of Health, it is concluded that

1 A single dose tuberculin test employing 001 mgm PPD is productive of too great a percentage of 4+ reactors to be generally employed.

2 A single dose tuberculin test employing 0005 mgm PPD might also be productive of too many 4+ reactions.

Obviously, further study is indicated to determine the optimum amount of PPD to be used in a one dose method.

14 FAIRLAWN AVE.

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TABLE I

	Total tests	Pos. reactions		Neg reactions		Pulmonary tuberculosis	
		No	%	No	%	No.	%
Clinics	3916	1291	33	2625	67		
Schools	4236	1841	43	2395	57	4	
Institutions							
Group I	1136	294	26	842	74	8	
Group II	368	186	51	182	49		
Totals	9656	3612	37	6044	63	12	

3 In Westchester County, our new cases of tuberculosis give a history of contact, at some time in the past, with cases of tuberculosis outside the county health area and in many instances outside of the state. A few of our cases apparently developed tuberculosis from sources in Europe.

4 Some contacts, presumably with primary infection, developed the reinfection type of tuberculosis from a second contact which has been made just a few months prior to the development of their active diseases. A recent case coming to the attention of the Tuberculosis Division had a primary infection occurring in Nebraska. This girl gives a history of recent exposure to another case in New York City and has developed active pulmonary tuberculosis.

DR. N. STANLEY LINCOLN, *Mount Morris*
—In the critical consideration of the technic and dosage of a test such as the tuberculin test, it is desirable to keep in mind the fundamentals such as (1) the type of test—also implying its relative accuracy—and (2) the purpose for which it is performed.

When a person becomes infected with a B tuberculosis, he develops a condition known as allergy or protein sensitivity. The tuberculin test is designed to determine the presence or absence of this allergy and in a very crude or rough manner give an idea of the degree of sensitivity. This condition of allergy when present is believed to be highly specific and the test is highly accurate and dependable when properly executed.

It is of very material practical assistance to all of us that a product such as PPD with consistent characteristics has been obtained. In a search, for a single test, there still remains an important factor to be reckoned with. It has been estimated, by those most expert and experienced in this field of study that the difference in degree of sensitivity of various individuals may be in the magnitude of one million. In other words, the extreme difficulty is at once apparent. The choice of technic, therefore, is definitely

related to the reason for using the test. In general it can be seen that these reasons are two: (1) To study a group, and (2) to study a single case. In a study of a group, we are primarily interested in determining the total number of reactors with accuracy and with the minimum number of 4+ reactions, which are unpleasant but otherwise not harmful. The subsequent and proper use of this data and its relationship to case finding has been brought out nicely by Dr. Deegan. On the other hand, I believe that the tuberculin test in the diagnostic study of individual cases in clinics, hospitals, and by private physicians has been too long and too much neglected. It is here that the single dose test may find its best application. This is illustrated by the paper presented by DIS of Tbc, S D H at N.T.A. in N.D. It is significant in their study of 1747 inmates in the Newark State School that that minimum dose which gave only seventy-two per cent of the total number of reactors did disclose all but two of the cases of significant pathology, one of which was a terminal case.

There is a study now in progress in rural northwest Minnesota where the total percentage of reactors even to large doses is only about six per cent in a study of about 5,000 individuals. The inference from this is that the degree of tuberculinization of the group studied is another factor to be considered in determining the dose or doses to be used.

Therefore, it is a mute question whether there will ever be a practical single test dose which is universally applicable and which will give the optimum number of reactors and still not give too many 4+ reactors.

The choice of single or multiple test doses must in our opinion be related to the problem at hand.

The problem of extending the span of human life will be attacked from a new angle, that of diet in the last half of adult life, in a six-year experiment at Cornell

University. President Farrand has made public a gift of \$42,500 by the Rockefeller Foundation to support the new study for six years.

the contact group, there is no evidence presented that would indicate an increased amount of pulmonary tuberculosis in the contacts although they are known to have more childhood infection.

Dr Deegan states that in any tuberculosis program, contact examination is second only in importance to the treatment of the known case. We have carried on a tuberculosis control program in Westchester County for the past five years in which examination of contacts has been a prominent feature of the work. We estimate that about sixty per cent of our clinic activities are for the purpose of supervising contacts of tuberculous families. However, the yield in pulmonary tuberculosis from these families constitutes less than ten per cent of the total number of cases of tuberculosis reported each year.

The average annual number of new cases of tuberculosis reported in the Westchester County Health District is 350. Of these cases, 125 are reported by private physicians on patients who have consulted their doctor because of symptoms. The general hospitals in the district report about sixty-five cases annually in patients who have been admitted with a diagnosis presumably other than that of tuberculosis. The tuberculosis clinic service reports 150 new cases each year of whom 120 are among patients admitted to the clinic for some reason other than that of contact with tuberculosis. Thirty cases of pulmonary tuberculosis occur in the contact group but since the use of tuberculin in the clinic is limited to persons under sixteen years of age, we have not discovered a single case of pulmonary tuberculosis as a result of tuberculin testing in the clinics. The thirty cases of tuberculosis discovered have all been in the young adult group where tuberculin tests are not routine. Our school service yields about ten cases of tuberculosis annually and in five years we have discovered four cases of tuberculosis in our schools as a result of tuberculin testing. The remainder of our school cases are found as a result of the x-ray of faculty members or children over sixteen years of age. It has been our experience that there is as much tuberculosis among the faculty members of school groups as among the school children.

The tuberculin testing program in Westchester is divided into three general groups, namely, clinic groups, school groups, and institutional groups. In all cases, tuberculin tests are limited to individuals under sixteen years of age. The results of our testing program is tabulated in the accompanying table.

Group II in the institutions consists of

a group of children previously tested and from whom all cases of pulmonary tuberculosis had been excluded prior to the testing by the County Department of Health.

In contrast to this study, it is interesting to note the result of a study made on young adult contacts for a three year period, 1932 to 1934 inclusive. This study included contacts between the ages of sixteen and thirty-five located from cases reported to the Health Department between 1920 and 1934. During that period, approximately 4200 cases of tuberculosis were reported to the Health Department. On January 1, 1935, 1370 of these cases still remained on the tuberculosis register as active cases of tuberculosis. From this tuberculous population, 2600 young adult contacts were located. Fifteen hundred of these contacts were examined and x-rayed in a three year period and ninety were found to have pulmonary tuberculosis. During that same period, 1061 new cases of tuberculosis were reported from sources other than contact examination, so that less than one out of twelve new cases were discovered as a result of contact examination in young adults.

After a case of tuberculosis has been discovered, we are able to trace to a known source of infection in about fifty-five per cent of cases, establishing the fact that about fifty-five per cent of our cases of tuberculosis can be proven to have had contact with cases of tuberculosis. It is evident, however, that something is lacking in our follow-up of contacts. The difficulties which present themselves are these:

- 1 In handling known cases of tuberculosis about twenty-five per cent of the contacts to these cases have disappeared from association with the known case.

- 2 In a number of cases the time which elapses between contact with a previous case and the development of the disease in the secondary case may cover a period of years. This can be illustrated by two examples. Recently a case of tuberculosis came to the attention of the Health Department with this history: (1) The patient is fifty-eight years old and has suffered from tuberculosis since 1921. His father was a naval surgeon who died in 1888 of tuberculosis. There is no other history of tuberculous contact in this man from 1888 until 1921. During that period he married and raised a family of four children, three of whom have completed a college education and the fourth is at present in college. None of these children show any evidence of tuberculosis. The tuberculous contact history in this case shows a lapse of nearly thirty years before the development of the secondary case. (2) Another instance is that of a case of a young adult who has been carried as a contact in the clinic service since 1926. There has been no contact since 1929. In January 1936, this contact developed pulmonary tuberculosis.

Inventory Time

The report of the Community Nursing Service in New York State for the period from February 15, 1933 to July 1, 1936 details a vast amount of work, for the most part well done. On the whole the Service may be assumed to have fulfilled its dual purpose, i.e., during a period of economic emergency to provide nursing care for the unemployed and needy and furnish work relief to nurses without employment.

Today, however, as relief promises to become a permanent institution in spite of brightening economic prospects, critical appraisal of the numerous agencies set up during the emergency is desirable, to determine, *first*, whether their activities are still necessary, *second*, whether their course brings them into unfair conflict with private interests, and *third*, in the event that their continuance seems advisable, whether their scope or methods should be altered.

In the case of the Community Nursing Service, assuming that most of the work done has a commendable and even necessary purpose, a question still arises as to the degree and effectiveness of the cooperation between the Service and the medical profession and the limits set to the nurses' independent activities. In arranging for the "correction of defects," does a nurse or doctor decide that a defect is present and its correction indicated? How far are nurses permitted to go, without medical supervision, in the prescription of diets for children and care in pregnancy and chronic illness?

These are important points and the Report of the Community Nursing Service does not make them entirely clear. "A supplementary state wide program of public health nursing with special emphasis on bedside care" can undoubtedly accomplish a great deal of good provided that it is carried out in active cooperation with the medical profession and does not attempt to substitute nurses for doctors in the administration of medical care. If

this Service, instituted as an emergency measure, is to continue indefinitely, constant and close contact should be maintained between it and organized medicine

Legal Problems of Artificial Insemination

The practice of artificial insemination has attracted considerable attention among the laity as well as the profession during the past few years. Where proper physical indications for it exist, it has been attended with astonishing success.

There are certain legal considerations, however, with which the physician must be familiar before he undertakes to perform an artificial insemination. The wife must be protected against subsequent divorce proceedings on the ground of adultery. If no living record is kept of the consent of both husband and wife to the artificial insemination, he may at any time offer as proof of adultery his own sterility and his wife's issue.

The legitimacy of the child also comes into question. Of course, legal adoption would solve this problem as far as the husband is concerned, but this would publicize what is desired to be kept secret. The child must also be protected against the eventuality that the mother herself might contest its right of inheritance on the ground of illegitimacy. Since such a situation has as yet not come before the courts, it would be well for the physician to obtain legal advice on this phase of the problem before he practices artificial insemination.

The couple must also be protected against possible blackmail by the donor, and the latter, if married, must be guarded against any action by his wife for adultery. Seymour and Koemer¹ offer many excellent suggestions along these lines to which should be added the expert advice of a lawyer.

¹ Seymour, F. I. and Koemer, A., *Medicolegal Aspect of Artificial Insemination*, J.A.M.A. 107 1531, 1936

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EDITORIALS

Answered for All

"Who Wants Socialized or State Medicine?" The answers furnished to this question by the Michigan State Medical Society paint a revealing picture of the attempt of a few paid reformers and ambitious politicians to foist compulsory health insurance upon an unwilling nation. The situation in Michigan is in no major feature dissimilar from that in New York. Here as there, no spontaneous demand exists for a radical revision of the present system of private medical care. Such pressure as is exerted upon legislators comes from seekers after personal profit who see in compulsory health insurance an opportunity for jobs, financial gain, or political power.

The great majority of people have no serious complaint against the type of service they receive under the present system. They know that no one need go without medical care for want of money. They see a steady decrease in morbidity and mortality rates and a lower incidence of preventable diseases like diphtheria than in any country with compulsory health insurance. They know that their physicians have no duty save to prevent and cure sickness and that under a system of free competition success depends on doing this job—and this job only—well.

On the economic side, the American public is astute enough to realize that

there can be no diminution in the costs of medical care under a system which sets up an elaborate political bureaucracy and requires a nonmedical worker for almost every physician rendering service. Government can make no gifts. Ultimately the worker must pay for the "benefits" of compulsory health insurance—in lower income, increased living costs, and higher taxes. Even if he never needs or receives any of the benefits, he still must pay. Since less than nine per cent of the people want for medical care for any reason under the present system, the odds are heavily against the small wage earner under compulsory health insurance. Each week he must make a definite, real sacrifice for highly uncertain future returns.

If compulsory health insurance really could effect the millennium promised by its supporters—lower the costs of medical care, raise the physician's income, and strengthen preventive medicine—the medical profession would be its staunchest advocates. The almost unanimous opposition of medical men is a conviction, based on observation of European experience, that compulsory health insurance sacrifices quality to quantity in medical care, degrades the physician economically and scientifically, and encourages malingering and hypochondria in the insured.

because of the arrival of prosperity. This program is not an emergency one, except in the sense that much of it is long overdue. Nor let it be forgotten that some of the most serious shortcomings of medical practice—those which are just as unsound from the social viewpoint as from the doctor's own selfish viewpoint—such as the abdication of leadership in personal preventive medicine to outside health agencies, public and private, and the perversion of clinics into a settled imposition upon the attending physician and a thriving incubator of the pauper spirit among the patients—these and other dangerous tendencies which are only appreciated as such in bad times, had their beginnings and their growth in times of prosperity when the doctors who influence the policies of organized medicine were too busy and too comfortable to notice or to care.

"Can organized medicine abandon its program when the heigh-ho days return? Let hindsight be the preceptor of forethought"

"WHATEVER THE FUTURE HOLDS for man and for the civilization he has created, there is no question that medical practice and the medical profession will play a major part. It therefore behooves the scientists and teachers having to do with the medical picture, the trustees and faculties of medical schools throughout the world, to closely cooperate in solving these problems which loom so clearly on the horizon in order that the relation of medical research and medical practice to man shall be properly coordinated, so that he shall fit his environment and his environment shall be congenial"—From the *Weekly Roster and Medical Digest*, Philadelphia

"* * * THE QUEST FOR A POLICY that will not only preserve the achievements of the past, but also open the way to progress, will continue endlessly, somehow, as long as men walk this earth"—Raymond Moley, in the November 14 issue of *Today*

GERMS AND PRESCRIPTIONS

When Dr. Brown writes a prescription at the bedside of a patient suffering from a virulent septic disease—is it possible that the prescription itself may carry to the compounder the very disease it seeks to combat?

Yes! according to Dr. Kosowski, of Warsaw (*Pharm Jour*, London, p. 135, 1935).

Dr. Kosowski found that there was a marked difference in the dangers, depending upon the kind of paper upon which the prescriptions were written.

Straw cellulose paper carried more germs than wood pulp, paper with gelatin and

starch as an ingredient was distinctly favorable to the growth of micro-organisms, but if vegetable mucilage was an ingredient the micro-organisms did not thrive.

He examined 360 prescriptions, which he had collected from various pharmacies in Warsaw, and found that they were all contaminated with dangerous organisms.

Of course, dollar bills or any other bills carry the same possibility excepting that they pass through many more hands than the prescriptions.

Anyhow—germs or no germs—prescriptions and dollar bills are altogether too scarce—*Am Jour Pharm*, August, 1936

NO TYPHOID DEATHS IN TWENTY-FOUR CITIES

New York State is not represented in the honor roll of twenty-four large cities which had no deaths from typhoid fever in 1935, a fact made all the more striking when it appears that thirteen of the twenty-four cities are in neighboring states all around us—two in Pennsylvania, five in New Jersey, and six in New England. The annual report on this disease is printed in the *A.M.A. Journal*. The twenty-four cities are Bridgeport, Conn., Cambridge, Mass., Elizabeth, N. J., Erie, Pa., Fort Wayne, Ind., Grand Rapids, Mich., Jacksonville, Fla., Jersey City, N. J., Long Beach,

Calif., Milwaukee, Wis., Newark, N. J., New Bedford, Mass., New Haven, Conn., Omaha, Neb., Paterson, N. J., Peoria, Ill., San Diego, Calif., Scranton, Pa., Somerville, Mass., Springfield, Mass., Tacoma, Wash., Trenton, N. J., Wichita, Kans., and Youngstown, Ohio.

Eight of these cities—five of them in New England—had no deaths either from typhoid or diphtheria in 1935. They are Bridgeport, Cambridge, Erie, New Bedford, New Haven, Scranton, Springfield, and Tacoma.

Shock

True shock is simulated clinically by many other conditions while pathologically the visceral changes are rarely noted. Moore¹ states that essentially shock is a circulatory deficiency evidencing a decrease in the blood volume and cardiac output and hemoconcentration. Clinically it is characterized by increased pulse, lowering of the blood pressure and basal metabolism, and impaired renal function.

In many respects hemorrhage, cardiac failure, extensive burns, and syncope may resemble shock. The reason for this similarity is due to the fact that the circulatory disturbances of shock result from the difference between the vascular capacity and the volume of blood. Any of the above conditions can produce this disparity, some by actual loss of fluid or blood, others by vasomotor disturbances. In none of these, however, do we have all the clinical and laboratory phenomena of shock together.

Pathologically, the findings in shock are like those noted in passive congestion. Moore feels that the congestion found in shock cannot be termed either passive or active in the sense that these terms imply. He feels that "acute venous congestion" is a more suitable term.

CURRENT COMMENT

"FINANCING OF THE SOCIAL SECURITY program from a tax on wealth, rather than on 'wage earners envelopes,' was demanded today by William Green, president of the American Federation of Labor.

"In an editorial in *The American Federationist*, the labor head urged union members to 'work steadily for amendments that will represent a true measure of social security'.

"While the present law constituted 'a great advance,' he said, the old age benefit plan is 'a sort of compulsory savings' program.

"The old age benefit plan provides for only a portion of our population and in part if not in whole represents pennies taken from pay envelopes—a sort of compulsory savings,' he said.

"When we realize the thousands of families that do not have enough income to provide adequate food, clothing and common comforts of living, we realize that funds for social security should not come from wage earners' envelopes directly or indirectly but from a general tax on the wealth they help to create."—From the *New York Herald-Tribune* of November 13.

"THE ONLY PEOPLE WHO HAVE BEEN SO concerned over our derelictions toward the sick and afflicted have been the professional advisers and busybodies who either are wealthy, do not have to worry about a living, and are quite willing, even eager, to direct the destinies of the medical profession, uninvited and unsought, and the writers of articles for public consumption, whose sole interest in the matter is in direct proportion to the sums received for the articles"—These people are "Our Critics" according to the *Milwaukee Medical Times*.

"THE STRUGGLE HAS JUST BEGUN" claims an editorial in the November issue of the *Westchester Medical Bulletin*, from which we quote a considerable part. "As business conditions improve, one hears more and more frequently the casual observation that the medical profession will probably find it possible henceforth to refrain from entering into any new programs or studies calculated to assure medical leadership in solving socio-medical problems, to extend medical participation in public health work, or to improve the collective economic position of physicians—and that perhaps some of its present activities in these fields can be abandoned with the arrival of prosperity.

"This suggestion is admissible only if one can assume that organized medicine today is *more than* fulfilling its responsibilities and obligations to the society in which it exists, that there are no important failures in the distribution or availability of medical care to the public, and that the economic status of the physician is not susceptible of further amelioration by his professional organization.

"If we try to chart the degree of success or failure that the organized profession has achieved to date in respect to each of these criteria, our result is a complicated picture in which glorious accomplishment in one field is contrasted with rather conspicuous shortcomings in another * * * *

"Organized medicine will be able to abandon none of its present essential program

¹ Moore V. H. Shock, Definition and Differentiation, *Arch. Pathol.* 22:325, 1936.

in which I adduced evidence indicating that vasomotor rhinitis, as well as the allergic diseases, develop on the basis of a constitutional predisposition consisting of retention of water and mineral substances. I also attempted to show that the development of the so-called common colds—notoriously associated with rhinitis in the great majority of cases—is made possible by a similar disturbance in the water and mineral metabolism.

In the therapy and prevention of vasomotor rhinitis, the allergic diseases and colds, I suggested measures aimed at the elimination of retained liquids and at the prevention of subsequent retentions. These measures include the administration of calcium which also appears in the mixture employed by Dr Kaplan. Mainly, however, the therapy consists of a diet which I call "antiretentional" (a low calory diet, rich in proteins, nucleoproteids and vitamins, and restricted in carbohydrates, fats, water, and salt), and which has proven its merit, not only in my cases, but also according to the observation of others. Thus in an article which was published in the

Lancet (1 1070, 1935), H W Barber writes the following:

As an example of the remarkable effects of an antiretentional diet the following case may be cited.

A boy of 15 was referred to my out-patient department by one of my colleagues last summer for a recurrent impetiginous anterior rhinitis, which nearly always resulted from his frequent colds. He was subject to repeated asthmatic attacks, and had so-called functional albuminuria. His mother stated that the boy consumed large quantities of sweets, jam, pudding, cake, and bread, his intake of fat was probably also excessive. I advised a strict antiretentional diet, which the mother promised to enforce. A fortnight later I saw the boy again. His rhinitis and chronic catarrh had cleared up, the albuminuria had disappeared, and his mother was astonished at the improvement in his general health. Since that time he has had no colds and has been entirely free from asthma, except at Christmas when his mother allowed him to relax his diet. He then promptly "caught a cold" and had several asthmatic attacks. Since resuming the diet he has been perfectly well.

Very truly yours,

EUGENE FÖLDES, M D

November 9, 1936

DR WINSLOW'S USEFUL HOBBY

The many members of county medical societies who have had the pleasure of hearing the genial President of the State Society tell stories of his experiences as medical examiner may be glad to have some of them preserved in print. This is made possible by the enterprise of the *Utica Press*, which recently reported the reminiscences of Dr Winslow as given at a meeting of the Oneida County Medical Society. The reporter first informs the readers that instead of fishing or following some sort of hobby, Dr Floyd S Winslow spends his spare time solving murders, performing autopsies and unraveling the many peculiar forms of violent death.

For twelve years he has served as coroner's physician in Monroe County. In that time he has developed a library of slides and a succession of weird stories which has made the average man's hobby look like an exercise in embroidery.

A man in whose conviction Doctor Winslow played a major part and who had threatened revenge, broke out of jail. Doctor Winslow was warned that the man was on his way back to Rochester and that he might try to get him.

The physician's son offered consolation, telling his father that even if the convict killed him, he would get the murderer. The

family was relieved of this unpleasant duty when police killed the convict near Rochester.

Among his many friends, Doctor Winslow had a man who proved unusually obliging. This man, a druggist, one night suddenly left the family circle, locked himself in the bathroom and collapsed. The coroner could find no evidence of poison in the bathroom and the family knew of none in the house.

When Doctor Winslow performed the autopsy, he found in the man's stomach, the label from a package of potassium cyanide. Doctor Winslow believes that his friend had swallowed the label to make it easier for him to determine cause of his sudden death. Apparently he had wrapped the poisonous powder in the label, with the gum arabic face outside. This made it easier to swallow.

The stomach juices melted the powder as the packet unwrapped and death came in a minute or two. Had it not been for his friend's forethought, a chemical analysis of the stomach's contents would have been necessary.

Another interesting case was that of a respectable contractor of Rochester who in a short period lost both his money and his wife.

(Continued on page 1897)

Correspondence

[THE JOURNAL reserves the right to print correspondence to its staff in whole or in part unless marked "private." All communications must carry the writer's full name and address, which will be omitted on publication if desired. Anonymous letters will be disregarded.]

Priority

To the Editor

1205 Dean St,
Brooklyn

In the December 1, 1935 issue of the NEW YORK STATE JOURNAL OF MEDICINE, Vol 35, No 23, p 1217, appeared an article by Dr Milo Fritz and myself entitled "The Novocain Pack, a Contribution to the Therapy of Fresh Accidental Wounds," in which we set forth a chance discovery by us that novocain applied to fresh wounds confers a degree of anesthesia sufficient to minimize or even remove the pain of suturing. This was new to us then, but during the past summer we have learned that we were not in fact originators of this use of novocain.

Dr Walter R Hewitt of 3615 Orchard Street, St Louis, Mo, originated the method as evidenced by his article which appeared in the *Journal of the Missouri State Medical Association*, Vol xxvi, No 8 for August 1929, p 395, under the title "A Physiological Method of Treatment of Accidental Wounds." He also fell on this small but useful discovery by chance.

We, of course, not having seen the *Missouri Journal* were unaware of the previous publication, and we are very happy to accord to Dr Hewitt full credit for his well-deserved priority.

I hope you will have space for this letter for the information of our readers.

Sincerely yours,

E K TANNER, M D

November 10, 1936

Endorsement of Foreign Physicians

1 E 63rd St,
New York, N Y

To the Editor

I read your editorial concerning endorsement of foreign licenses. How much better it would be to endeavor to utilize the Australian, English, German, French and Italian methods whereby they will not recognize any American graduate unless, first, he becomes a citizen of their country, secondly that the country that he comes from reciprocates in full and on an actual basis that is the same, for their degree! Our silly method of licensing by endorsement or recognizing foreign schools and countries that

will not recognize ours is too inane to hardly mention. In other words let us reciprocate with foreign countries on the same basis that they reciprocate with us. When New York State physicians pass that law, then they will have something worthwhile. All the rest of it is just marking time.

Very truly yours,

THOMAS J KIRWIN, M D

November 10, 1936

Cod Liver Oil as a Dressing

105 E 63rd St.
New York City

To the Editor

The November 1st issue of the STATE JOURNAL carries an abstract of an article relating the value of cod liver oil as a wound dressing. I wish to inform you that I have used cod liver oil in ophthalmological practice for the past five years. I employ it in cases of epithelial dystrophy of the cornea by instilling it into the conjunctival sac and then gently massaging the cornea through the closed lids. The results have been excellent.

Yours truly,

JOSEPH LEVINE, M D

November 10, 1936

Vasomotor Rhinitis

898 Park Ave,
New York, N Y

To the Editor

In the NEW YORK STATE MEDICAL JOURNAL for November (Nov 1, page 1655), an article appeared by Dr Samuel Kaplan on "Vasomotor and Atrophic Rhinitis. Relation to Body Fluids and Sodium Metabolism." In this contribution the statement is made that "the writer firmly believes that vasomotor rhinitis in itself is not an allergic state, but is the result of faulty fluid and sodium balance." I wish to call your attention to a publication (Eugene Földes, *A New Approach to Dietetic Therapy, etc, Metabolism of Water and Minerals and Its Disturbances*, R G Badger, Boston, 1933),

the operation of a rehabilitation clinic or bureau under Section 13-J of the Law. Nothing herein contained affects the right of transfer as provided in Section 13-a (3).

Rule 3 When a medical examination is had under Section 13-a(4) it shall be by a qualified physician at a place reasonably convenient to the claimant and in the presence of the claimant's physician, if in the latter's opinion his presence is necessary. A duplicate copy of all notices of requests

for examinations must be sent to the attending physicians.

Rule 4 No physician designated by an insurance carrier or an employer as a consultant, in the case of an injured employee, shall subsequently participate in the medical or surgical care of said injured employee, except with the written consent of the injured employee and his attending physician. Nothing herein contained affects the right of transfer as provided in Section 13-a(3).

November 20

We have been requested to secure the cooperation of all authorized physicians in *promptly closing* a case in which they have completed the treatment. The physician should complete his treatment of the patient as soon as feasible and render a bill for *services promptly*. Delay in rendering a bill, and, in a protracted case of informing the carrier of the completion of the case, results in great inconvenience, not only to the physician but to the injured claimant, employer, and carrier, alike. The payment of bills will be greatly facilitated by the prompt

submission of bills with a notation concerning the completion of the treatment of the case.

In prolonged cases (not coming under a fixed time schedule for treatment) progress reports should be submitted and bill rendered *periodically*. Physicians are requested to give their utmost cooperation in speeding up the administrative details incident to the amended Workmen's Compensation Act.

DAVID J. KALISKI, M.D., *Chairman*

FREDERIC E. ELLIOTT, M.D.

B. WALLACE HAMILTON, M.D.

(Continued from page 1895)

through death. This man was seen outside a factory for seven successive weeks on the morning the payroll was brought by armored car. On the eighth week, the police were summoned.

When an officer started questioning the man, he shot the policeman through the hand. As he ran away, a second prowler came up and officers fired three shots. They appeared to hit the fugitive in the back but he was not stopped. The policeman changed his aim, raising his gun and the fourth bullet brought the man down, instantly killed.

When the body was brought to the morgue, Doctor Winslow found the man had encased his body in a suit of home-made armor. The metal, regular boiler plate, was hinged about his trunk, completely protecting the vital organs.

Three dents, made by the first three shots, showed in the back of the armor. The fourth shot had slipped above the plate and struck his neck which was unprotected.

A little more scientific is the story of the bootlegger who was shot early one morning. A Rochester milkman told police he had seen a colored woman in that block about the time of the shooting. She was located but there was no evidence linking her to the crime.

Finally Doctor Winslow put under the

microscope scrapings from under her fingernails. He found a mixture of potato peelings and skin of a white man. The woman then confessed.

Doctor Winslow firmly believes that just as physical evidence at the scene of a crime indicates the criminal, in exactly the same way bodies put through an autopsy always show the method and circumstances of criminal assault and death, and this evidence is invaluable in prosecuting criminals.

He cited a case where four men attempted to rob a gas station and garage. The owner, who had been robbed once before, was ready, hiding in a dark corner with an automatic rifle. When the three men (the fourth was the driver, left in the car) came into the garage, the owner opened fire. The thieves returned the fire with their pawn shop revolvers. At the end, two of the intruders were dead and the third was badly wounded.

Doctor Winslow's testimony, based on the autopsy, showed that in the battle in the dark one of the thieves had been killed by a bullet from a confederate's gun.

As a result, the surviving members of the party were convicted of murder, first degree, under the state law which makes all participants in a crime guilty of murder, first degree, if anyone is killed during execution of the crime.

COMMITTEE ON WORKMEN'S COMPENSATION

In advance of the promulgation of rules and regulations governing the licensing and conduct of *physicians compensation medical bureaus*, the Committee on Workmen's Compensation wishes to draw to the attention of all physicians practicing under the Workmen's Compensation Act the necessity of signing all forms and reports issued under the amended Workmen's Compensation Act with the full name of the attending physician as well as his authorization number and symbol

If a rubber stamp is used for legibility, the attending physician must in addition personally sign his own name. Where more than one of a group of physicians has treated a case, unless one physician assumes

full responsibility, each physician should sign the report or form and indicate the dates on which each participant in treatment attended the patient. This procedure is necessary in order to protect the interests of the claimant and to enable the referee of the Department of Labor to ascertain the name of the physician or physicians treating the patient.

It is advisable for qualified physicians to keep adequate records of the history and treatment of each claimant patient in such form as will enable the attending physician to render satisfactory reports and give proper testimony before the Department of Labor in the event that the physician's testimony is required.

November 12

The attention of physicians qualified under the Workmen's Compensation Act is directed to section 13(a) of Chapter 258 of the Laws of 1935.

The Law reads

The amounts payable by the employer for such treatment and services shall in no case be less than the fees and charges established by such schedule. Nothing in this schedule, however, shall prevent voluntary payment of amounts higher than fees and charges fixed therein, but no physician rendering medical treatment or care may receive payment in any higher amount unless such increased amount has been authorized by the employer, or by decision as provided in section thirteen-g herein.

Nothing in this section shall be construed as preventing the employment of a duly authorized physician on a salary basis by an authorized compensation medical bureau or laboratory.

Physicians are hereby notified that to enter into any contract with an employer for the treatment of patients for a fee less than

that contained in the schedule is a violation of the Law punishable under Section 13-d (d) by removal from the list of physicians authorized to render medical care.

Physicians who have in the past entered into such contracts are hereby advised that they are not in accordance with the provisions of the law and must be terminated at once. Under the strict interpretation of the Law such contracts became illegal on July 1, 1935. In view of the *status quo* arrangement pending the promulgation of the fee schedule by the Industrial Commissioner, physicians who had entered into such contracts were permitted to fulfill them until the fee schedule was promulgated. All such contracts which contravene the provisions of the Law in respect to the minimum fee schedule are definitely illegal and unless terminated at once will result in action by the County Society or the Workmen's Compensation Board of the County Society.

November 17

In order that all communications by insurance carriers to their policyholders relative to medical care of employees shall be in conformity with the Compensation Law and the rules and regulations promulgated by the Industrial Commissioner regarding the free choice of any physicians on the panel, the following rules have been promulgated.

Rule 1 The supplying of names of authorized physicians by insurance carriers to their policyholders is in contravention to Section 13, as amended by Chapter 258 of

the laws of 1935. Such policyholders and all employers may secure a list of all Authorized physicians in the vicinity of their places of business by applying to the Industrial Commissioner of the Department of Labor.

Rule 2 Any physician who acts in the capacity of medical inspector for an insurance carrier or employer in the case of an injured employee under the care of another physician shall not participate in the treatment of said injured employee except in

VI Physical Diagnosis (a) Recognition of conditions in the mouth capable of acting as foci of infection—X rays, transillumination and pulp testing as diagnostic procedures (b) Recognition of other conditions prejudicial to health—carries unerupted teeth, malocclusion, faulty dentures etc.

VII Medicine and allied specialties The relation of dental conditions to general diseases

VIII Surgery and allied specialties In addition to covering oral surgery the importance of dental infections as causes of various general surgical conditions and the necessity for dental care in addition to other surgical procedures should be stressed.

4 In the senior year, one to three lectures correlating all the facts presented in the different courses should be given preferably by a dentist of wide experience.

5 Every medical student should have a full mouth dental X-ray taken

Obstetrics

Obstetric patients should make regular visits to the dentist during the entire course of gestation

1 Prophylactic dental care

A Hygienic care of the oral cavity

B Diet for expectant mother Influence of diet on teeth of mother and offspring, influence of vitamins, influence of viosterol (cod liver oil)

C Focal infection—factor in toxemia of pregnancy and sepsis (postpartum)

2 Active dental care during pregnancy for acute conditions which may include

A Extractions, fillings, root canal treatment, apical abscess, removal of benign neoplasm, gingival hypertrophies, pyorrhea

B Anesthesia Local or Block, and general.

3 Medical-dental conference about case, progress notes

A Medical-dental conferences should be held when the dentist is in doubt about his patient's general health.

B The medical attendant should keep with his records the dental diagnosis and notes furnished by the dentist on the treatment he rendered to the patient.

C The physician should note whether or not there is improvement in general health of patient

Recommendations for Dental Schools

1 *Supplement courses in general pathology by more practical clinical observation* Courses in general pathology should be supplemented by more clinical observation of the conditions causing the morbid tissue conditions covered in the lectures and laboratory instruction. The correlation should be extended to clinical observation of the course of infections studied, so that lectures and laboratory examinations may be tied in definitely with clinical symptoms

2 *Courses in Maxillo Facial Surgery should provide actual hospital operative experience* The courses in Maxillo Facial Surgery do not give enough hospital contact and experience. The men do not actually work, themselves, under hospital conditions. Therefore, provision should be made for dental students to actually do operations in the hospital for sev-

eral days. Even if the operation is a simple extraction, the students should prepare in the same manner as if a major piece of Oral Surgery was to be done. Only by actual participation can the proper feeling and understanding be given to these men

3 *Courses and assignments in oral diagnosis to be extended to actual medical and dental cooperation* Particular stress should be laid on the relationship of dental infection to disease elsewhere in the body. Physicians and dentists should cooperate in making the diagnosis. The case should be worked up by both professional groups in the presence of the students and a complete program for health rehabilitation determined upon so that the dentist will know what effect may be expected to result by his prevention of, or elimination of infection in his particular area, and what effect will be had upon the dental efforts by the elimination of infection, and alteration of systemic disturbance by the physician.

4 *More actual practice training should be provided* In those universities having the Medical School Hospital available, efforts should be made to provide each student with actual residence within the hospital under competent supervisors, even though the time may be only one week. First, more actual knowledge of hospital procedures, practice, care of the sick and gravity of dental service will be obtained by the student, and second, more students will be stimulated to seek appointments to hospital service internship after commencement.

5 *Medical and dental student's health examination* Every dental student should have in his third or fourth year a thorough physical examination following the above ideas, and a written report submitted by the student, analyzing his own condition and making specific recommendations for treatment, should be provided.

Actual experience in clinic and classroom will soon produce further advancement of teaching to better impress the student dentist that his every service is a health service, that the physicians aid should be sought frequently, and that aid and cooperation should be given freely to the physicians at all times

The Committee is constituted as follows
First District Dental Society, Theodore Blum, M.D., DDS and Roy D. Ribble, DDS,
Second District Dental Society, William McGill Burns, DDS, Lawrence J. Dunn, DDS and Orville S. Long, DDS, Bronx County Medical Society, Maurice O. Magid, M.D., Kings County Medical Society, Albert F. R. Andersen, M.D., N. Y. County Medical Society, John Stanley Kenney, M.D., Queens County Medical Society, Frank R. Mazzola, M.D., Richmond County Medical Society, Mortimer B. Genauer, M.D.

It invites opinions and suggestions on these recommendations. They may be addressed to the Secretary, M. O. Magid, M.D., 1018 E. 163 St., New York City

The 1936 annual joint meeting will be held

MEDICAL-DENTAL TEACHING

Organized six years ago by the five county medical societies and the two district dental societies to arrange programs for combined meetings of physicians and dentists in the five boroughs, the Joint Committee of the Organized Medical and Dental Professions of Greater New York has not only fulfilled well its instructions but also made a special contribution in the field of professional education

The Committee, listening to the papers presented—at its own instance—to the joint

meetings arrived at the conclusion that the professional pathways cross frequently and that perhaps both medical schools and dental schools might help their students to a wider horizon of knowledge by providing for each group some instruction in the adjoining field of scientific knowledge. It then set a sub-committee to work to scrutinize present teaching of the sort in a number of medical schools and dental schools. The result was a report which was submitted a year ago and is here reproduced

REPORT OF SUBCOMMITTEE ON CURRICULA TO THE FIFTH ANNUAL COMBINED MEDICAL-DENTAL MEETING, DECEMBER 2, 1935

The public is entitled to the highest type of health service from the medical and dental professions. With advancement in science, medical care of the sick has become, in many instances, a problem for group practice. The aids of the laboratory, x-ray, and various specialists are often included in caring for a patient. It is only quite recently that the physician has come to realize the dentist should be included among the specialists to be consulted.

For the past five years the Joint Committee of the City of New York has been encouraging medical-dental cooperation in the treatment of the sick. The Joint Committee has conducted combined medical-dental meetings and arranged programs which attracted large audiences of physicians and dentists. These meetings have become a regular institution in Greater New York. This committee has arranged medical-dental programs for the New York State Medical and New York State Dental Associations.

While considerable progress has been made in reaching the practicing physicians and dentists, the Joint Committee realized that in order to make medical-dental cooperation more general in the future it was necessary that medical and dental schools should be encouraged to teach their students the importance of such cooperation in caring for patients.

To carry out this objective, the committee sent a questionnaire, two years ago, to all grade A medical and dental schools in the United States and Canada to ascertain to what degree the schools emphasized the correlation between medical and dental subjects. The report of this research was submitted at the 1934 Combined Medical-Dental Meeting and aroused considerable interest among the educators present who discussed the report. It was suggested, that knowing the deficiencies of this teaching in the professional schools, it would be of value to have the Joint Committee go a step further—to submit specific recommendations for the improvement of medical and dental curricula in regard to this important but neglected phase of instruction.

Following the adoption of a resolution at the 1934 meeting a subcommittee was appointed to

study the curricula of all Medical and Dental Schools and to report back to this body its opinions and recommendations.

The subcommittee decided that since the curricula of the schools are already overcrowded with courses, and many departments are clamoring for more teaching hours it would be best, for the present, not to suggest any radical departure from present methods, but to attempt to suggest changes which would not materially alter the curricula of the schools, but would use already available hours in the various teaching branches to emphasize the relation between the teeth and general health.

To go into detail as to hours and subjects to be taught would only engender resistance on the part of the schools, so the committee is presenting the following outlines which it hopes will call attention of the educators to the subjects in which medical-dental relationship arises.

Recommendations for Medical Schools

1 The committee is of the opinion that if attempts are made to force too much upon medical schools in this connection they will say they have no room for a course in this subject and will not consider the matter at all.

2 The committee does not believe that it is practicable or necessary to give a complete, comprehensive course in this subject.

3 By calling attention of the various teaching departments to the importance of the teeth in relation to the general health and disease, much can be accomplished toward furthering the cause. The committee therefore makes the following suggestions for the medical curriculum.

I Anatomy and Histology. An hour's special attention to teeth and jaws.

II Physiology. The importance of the teeth in digestion, mastication. Occlusion.

III Pathology. The lesions of the teeth, alveolar processes and jaws and their relation to diseases of sinuses, nose and throat and general diseases.

IV Bacteriology. The teeth and their surrounding tissues as soil for bacterial growth and for dissemination of infections.

V Hygiene. Importance of care, preservation and replacement of teeth to prevent diseases.

Historical Article*

A HISTORY OF MEDICINE IN THE STATE OF NEW YORK AND THE COUNTY OF MONROE

FLORENCE A COOKSLEY, B.A., M.A., Rochester
Librarian, Rochester Academy of Medicine

Part II History of Medicine in Monroe County

Chapter I

Conditions in Early Rochester

*Early history of region Jesuits the first settlers the Senecas, Conditions of country
Dangers of English invasion Wild animals Routes of travel Early roads 1806 Erie
Canal 1824 First railroads, 1837 Settlement of Rochester Established 1797 First
bridge, 1812 City incorporated 1817 Settlement of neighboring towns, Rapid growth
Early newspapers quoted*

Monroe County of the State of New York is not one of the old counties of the state, for it was not incorporated as such until February 21, 1821. Until then all that part of it situated on the west side of the Genesee River had been included in Genesee County, which included in addition, half of the present Livingston County. Batavia was the county seat of Genesee County as it is today. Until 1800 Ontario County was even larger than Genesee County, in fact was of great extent as it included the present counties of Niagara, Chautauqua, Cattaraugus, and part of Alleghany County, and had a population of 12,584. In 1810, Genesee County was formed and contained a population of 12,644, which increased in four years to 23,951 persons. As we have stated, the west side of the Genesee River was in this Genesee County at the time of the establishment of Monroe County and the east side of the river was in Ontario County, with Canandaigua its county seat. Ontario County also contained what is now Yates County and the other half of Livingston County. Thus the Genesee River separated the two counties and it is humorously related that debtors escaped the sheriff by running across the bridge.¹ These two large counties, Genesee and Ontario had together 80,000 inhabitants. The rapid rise in population is commented upon in an early newspaper, the *Rochester Gazette* in 1820, thus

New York is not the only state that has thus swelled its population the Southwestern states are arising and joining the confederacy the Floridas will soon be ours and the Canadas are

now at our command but we do not want them Europe may well regard our growing strength with jealousy, if the wise policy of our government be seconded by harmonious co-operation of the states, twenty years more will present America to the world the Lion of the North, powerful in peace and dreadful in war.

The two county seats, Batavia and Canandaigua were considered too far distant from Rochester, for with bad roads and the bridges few and far between, the trip to these towns was difficult and dangerous, particularly in winter when roads became almost impassable and the citizens felt a need of smaller boundaries and an easily accessible county seat. "It is a singular fact," states an editorial in that same paper, "and which should be known at large, that without any business of consequence arising within the limits of Canandaigua, the village of Rochester for the unspeakable privilege of carrying its business to be transacted thirty miles from the place where it arises, pays to the former village, in the mere expense of living at the present circuit, a tribute of at least \$800.00." There was a great deal of objection on the part of Batavia and Canandaigua to the proposed new county. Their citizens urged that the expense of erecting new county buildings would be too great but Canandaigua was then needing a new Court House and the people of Rochester thought they preferred to contribute to their own buildings. After much opposition Monroe County was carved out of the two counties. Being interested especially in the medical history of this county we note that on December 8, 1818, some of the citizens

*Continued from November 15 issue.

on December 7 under the auspices of the Better Dentistry Meeting at the Hotel Pennsylvania, New York City. The program follows:

10 A. M. INVOCATION

Presiding, Clarence J. O'Connor, M.D., Pres. Bronx County Medical Society and James M. Dobbins, M.D., Pres. Queens County Medical Society

Progress Report of Subcommittee on Curricula Study, M. O. Magid, M.D., Chairman.

1 Diseases of the Oral Cavity of Medical and Dental Interest, Samuel Feldman, M.D. Discussion by Leo Spiegel, M.D. and Henry Dunning, D.D.S., M.D.

2 Medical Problems in Orthodontia. Bernhard W. Weinberger, D.D.S. Discussion by Ralph Waldron, D.D.S. and Edward Mason Griffin, D.D.S.

2 15 P. M. CLINICAL MEETING

Presiding, Henry Joachim, M.D., Pres. Kings County Medical Society and Wm. J. Buntin, M.D., Pres. Richmond County Medical Society

1 Lesions in Oral Cavity. Presentation of

Patients—Clinical Pathological and Roentgenological data. Adolph Berger, D.D.S.

2 Vitamin Deficiency Conditions in Children. Presentation of Patients. Reuben Turner, M.D.

3 Clinic—New York Institute of Clinical Oral Pathology. Cases to be presented by Raymond Gettinger, M.D., Herman L. Reuss, D.D.S., and Meyer L. Rosoff, D.D.S.

4 Radical Antrum Operation. Cases illustrating the superiority of the Intranasal Route over the Canine Fossa Approach. Simon L. Rusk, M.D., and Max Halle, M.D.

Note. Discussion or questions after each group of cases.

8 15 P. M. STATED MEETING

First District Dental Society

Presiding, Jacob B. Schneer, D.D.S., Pres. First District Dental Society and Chas. E. Farr, M.D., Pres. N. Y. County Medical Society

1 Executive Session

2 The Responsibility of the Dental Profession in the Early Diagnosis of Intraoral Cancer, Hayes E. Martin, M.D.

AN "ATLAS OF TUMORS"

Dr. Francis Carter Wood, director of the Institute of Cancer Research at Columbia University, announces the preparation of "an extensive diagnostic atlas of tumors" as a means of promoting further study of this disease on an international scale. He spoke at a luncheon held under the auspices of the New York City Cancer Committee at the National Arts Club. The meeting marked the tenth anniversary of the founding of the New York City and State Cancer Committees.

Dr. Wood recalled that the "atlas of tumors" was proposed at the International Cancer Congress in Brussels last September and that the committee on its preparation had commissioned him to start the

work. Wide support has been received from outstanding pathologists abroad for its preparation within the next two years, Dr. Wood said.

"The fact that this volume bears an international stamp," he continued, "will no doubt stabilize our ideas of tumors and lead to the publication of a large number of the rarer types which may have hitherto been somewhat neglected, thus clarifying a good many facts, both clinical and scientific, which are important to develop as quickly as possible inasmuch as the growth of radiation therapy necessitates a more complete knowledge of the biology and natural history of a neoplasm than its mere excision by surgical technique."

FRANCE HAS A "SECRETARY OF LEISURE"

The socialistic government in France has not only brought shorter hours and higher wages for the workers, but has obliged employers to grant annual vacations with full pay. This has led to the appointment of a cabinet minister known as a "secretary of leisure," whose duty it shall be to encourage physical education and to aid the workers to spend to the greatest advantage their non-employed time and especially their paid vacation periods. Information is provided as to where to go, at all seasons of the year, and special railroad or bus round-trip rates

in all directions, even to foreign countries, are arranged for. G. Lavalee in the *Concours médical*, suggests to the "secretary of leisure" that sport competitions, theaters which follow provincial circuits, and increased use of the radio are not innovations but that a serious effort should be made to supervise the omnipresent saloon lest the leisure hours be spent there. At least one or two thousand saloons ought to be suppressed to prevent the free Saturdays and Sundays being passed there by the worker.

1812-14 the British fleet hovered about the mouth of the river, firing a few guns in their maneuvers. In Pultneyville, on the Lake, owners of a very old home proudly point to holes in the walls made by British shots. Sir James L. Yeo was admiral of this fleet consisting of five large and eight small vessels of war and he succeeded in very thoroughly frightening the inhabitants who fled in terror.⁶

Travel to this part of the country was difficult and hazardous. Wild animals abounded, deer, moose, elk, buffalo, bear, wolves, panthers, wild-cats, and smaller animals such as mink, martin, and otters. An early newspaper reported the finding of a dead panther nine feet long in Oak Orchard on the Lake Shore and later that one had been seen in Batavia. In the City Directory of 1844 the historian stated that in 1817 a Mr. Brooks living near what was known in 1844 as the Buffalo bridge, complained that bears had carried off his apples which he had hung on the outside of his house to dry. The last wolf was killed in Monroe County in Irondequoit in 1830. A present inhabitant of Rochester remembers hearing of a doctor in Parma who in those early days, spread asafetida on the snow to keep the wolves away. These various wild animals made travel unattractive and especially to the timid.

Travel was not only unattractive but uncomfortable. A stage road in poor condition, almost impassable in winter, ran as early as 1806 from Palmyra to the falls of the Genesee. In 1816 it was extended to Canandaigua and in the same year Ridge Road was built and became a most important road in the development of trade in this part of the country. In 1827 there were two stage routes between Rochester and Albany and one from Rochester to Buffalo, a fare of three and a half cents per mile was charged. In 1824 the Erie Canal was opened to Rochester and was hailed as a promising new route of travel. During the eight years in which it was being built it was spoken of as the "Grand Canal" and much was hoped for in its use and not in vain. From that time on, the settling of the county was rapid. The fare on this canal was four and one-half cents per mile and in 1834 eight packets plied between Buffalo and Albany, a three and one-half days trip each way or eighty miles in twenty-four hours. There had been

other boats previously, running from Rochester to various places on the lake and some of them traveled up the Genesee River for a long distance. Travel by railroads came later, in 1837 the first train ran to Batavia and in the following year to Auburn, then in 1840 to Canandaigua and a year later to Albany.⁷ One can easily understand how the early development of this country was delayed through lack of traveling facilities.

Most of the early inhabitants of Monroe County came from New England with a few from England, Ireland, Scotland, and Germany, while a very few came from Canada, Norway, and Switzerland. The first Rochester directory, of 1827, states that of the population of 8,000 not one adult was native born.

Rochester itself, was one of the last places settled in the county. The reason ascribed by early writers was its dense forests, the hostile Indians, and the unhealthy swamp lands filled with mosquitos. In 1790, Phelps and Gorham sold the "Mill Tract" which included all of the present Rochester lying on the west side of the river. It was surveyed in 1790, subdivided in 1797, and settling began soon afterward. In 1812, there were three families living on the east side of the river and none on the west side. In 1813 there was a population of fifty, and five years later over one thousand people had settled in Rochester. The only places where the Genesee could be crossed between Avon and Lake Ontario was at Rochester-ville, later called Rochester, where the county built a bridge in 1812, costing \$12,000. "The construction was very violently opposed by many people who said that a bridge at this place was entirely unnecessary as the Avon bridge was adequate for the needs of travelers in the Genesee country."⁸ The Genesee was then a river that frequently flooded its banks and there were several big floods, a very destructive one in 1805, another in 1817 which necessitated the building of dykes in Exchange Street to prevent flooding of the lower parts of the village, another came in the spring of 1832 when the "river covered the flats of the Genesee for twenty miles" at which time the bridges at Mt. Morris and Avon were swept away.⁹ There was another flood long after, in 1865, which flowed over Main Street bridge and over

of the town of Gates held a meeting regarding this proposed change and that with Nathaniel Rochester presiding, a physician, Dr Frederick F Backus, who later appears so often in Rochester's history, acted as secretary of the meeting

Livingston County was also sliced off the two counties at the same time that Monroe County was formed This no doubt was a blow to the two busy towns, Batavia and Canandaigua At the time of all this agitation, Monroe County was spoken of in the newspapers as Rochester County but was incorporated as Monroe, being named after the President of the United States, James Monroe

For the sake of clearness, in this record we will speak of Monroe County as though it had its present name and boundaries since Revolutionary times

In the early records this corner of the State is known as the "County of the Genesee" Genesee is an Indian word meaning "Pleasant Banks" and the word Ontario, we are told, comes from Kayatario, meaning "Pleasant Lake" If the banks of the Genesee and of Lake Ontario were pleasant, they were so only to their namers, the Indians, for all the country thereabout was a wilderness inhabited by hostile Indians, a forest of dense growth penetrated only by occasional paths worn down by moccasined feet. It is said that many of the present Rochester streets are old trails beaten out by the Senecas through the forest.

The first settlers, as in many of the lake regions, were the Jesuits who came as missionaries to the Indians in 1634 Rochester at that time was a camp site called by the Senecas, "Ga-sho-sa-go" or "At-the-Falls" These Jesuit fathers were not welcomed by the Senecas and other members of the Iroquois and their lives were in danger at every step We are told that the Franciscan missionaries had much to do with opening the Genesee country and that most of them came from Canada and spread from the eastern part of the state westward to the Genesee but not going as far west as the site of Buffalo for many years Father Hennepin accompanied La-Salle in 1669 when he explored the region of Lake Ontario and Little Seneca River, as he called the Genesee and he wrote of the wonderful falls and the numerous rattlesnakes We are told further, that "no locality was more unpopular than the

falls', the present site of Rochester, that dismal swamp in the roaring of cataract, that rendezvous of muskrats, mosquitoes and rattlesnakes and with the worst reputation for fever and ague."

The Senecas, early inhabitants of this section of the State, were warriors, blood-thirsty and cruel In 1687 a stockade was built at Irondequoit Bay where twelve hundred men were cared for, sick and wounded The Senecas who had destroyed the Attrouandarouks or Neutral Nation about 1650, except for the few survivors whom they absorbed, had finally come to occupy all this country which had belonged to that Nation Until then, "the beautiful region was abandoned to the undisturbed dominion of nature, save when traversed by the warrior on his predatory errand or the hunter in pursuit of game A dense and unexplored wilderness extended from the Genesee to the Niagara with here and there an interval where the oak openings let in the sunlight or the prairie lured the deer and the elk to crop its luxuriant herbage." After the stockade was built, the Marquis de Nouville, governor of Canada, brought a large invading army and defeated the Senecas near the present site of Victor, burnt their villages and drove them away The Senecas were too superstitious to rebuild their abandoned homes and they scattered into the fertile valley of the Genesee where they cultivated maize and regained some of their prosperity

At the time of the Revolutionary War, the Senecas "espoused the British cause" and committed such atrocities that General Washington sent an army under General Sullivan against them and they were defeated and scattered, never again returning to the Genesee country It is said that the New Englanders and the Pennsylvania Dutch who accompanied Sullivan were amazed at the richness of the land and after the war was ended, many hurried back as settlers By 1815, after all trouble with Great Britain had ceased, Rochester began to grow rapidly and "settlers arrived faster than roofs could be made to cover them, it was not uncommon to see a line of wagons in the main street, occupants living in and under them waiting for the erection of their cabins"

Fear of the English as well as fear of the Indians, is a reason given for the late settling of Rochester In the war of

We are pleased to observe the increasing travel through this village on the Ridge Road to the Niagara Falls. A stage runs this route three times a week, the road is excellent and the accommodations good.

Although Rochester had a population of only fifteen persons in 1812, five years later it had 560 and five years after that, in 1822, it had 2,700. When the city was incorporated in 1834, it had a population of 12,252. A century later, in 1935, the population was 330,000. It is said that in 1834, the growth of the city had been so rapid that houses were scarce and six or even seven families lived under one roof. Few cities, if any, in this part of the country has had a growth as rapid as Rochester and it was due to the improved health conditions and better transportation facilities in a place strategically located.

As early as 1823 Rochesterville had an ordinance requiring sidewalks on both sides of Buffalo Street, later called West Main Street and on Carroll, Exchange, Hughes, and Sophia Streets. At the same time we read that the west side of the Genesee was a dense forest of heavy timber. However, houses were being erected rapidly and because the streets were obstructed by building material, it was thought that streets should be lighted but the city fathers were unwilling to spend the money and voted against the proposition. By 1845 street lighting had been installed, whale oil lamps being used for this purpose.¹²

An editorial in the *Rochester Gazette* of September 19, 1820 is of such interest and so well written that we may well include it in its entirety here.

There is nothing in which American enterprise, boldness and intrepidity is more strikingly displayed than in the rapid increase and development of the inexhaustible resources of our country—in the construction of bridges, roads and canals and in almost everything substantially useful to the present and future generation. These improvements form the solid glory of the nation—a proud column of fame around which the blessings of posterity will gather. Other nations may boast of their victories—they may tell us of thousands slain in fighting the battles of ambition, or to slake the thirst for revenge and of the extent of their conquests, we can be proud of less sanguinary fame in making the wilderness to bud and blossom and in diffusing those substantial blessings which make a people prosperous and happy. "Agriculture was the first employment given

to man by his Maker and gardens must bloom before virtue blossoms." It has been said that nations like individuals, have their youth, maturity and decay. We are in the full vigor of youth—an infant Hercules—the "proudest Empire of Europe is but a bauble to what America may—must be." The rapid changes which are taking place, the sudden transition of the wilderness into cultivated fields, the rapid increase in population, the dissemination of useful and practical knowledge among the people, and the advancement of the arts and sciences, all have outstripped the calculations of the most visionary and devoted admirer of the country and are sure guarantees of the wisdom and stability of our social compact. A foreigner would with reluctance believe that a country so well improved as Ontario could have been a wilderness thirty years ago. The change is truly astonishing. The work is going on. Today we see a trackless wilderness, tomorrow the forest has disappeared,—the smiling cottage, the golden harvest and the busy hum of industry have succeeded to solitude and desolation. But a few years ago the passing traveler might have looked in vain for 'the smoke that so gracefully curled around a green elm' as a signal of a cottage in which he hoped to meet the cordial greetings of hospitality. Here on the Banks of the Genesee River, the poor Indian "whose soul proud science never taught to stray, far as the solar walk or milky way" held his infernal orgies, here he sat in counsel and sang the war song—here the faggot pile was erected, the victim bound, the torch applied—and here the tortured soul amid all the horrid cruelties that savage ingenuity could invent, breathed out his existence invoking vengeance upon his tormentors. The scene is changed, the few red men that remain, the mere shadows of what they have been, gain a scanty subsistence and wander about like the ghosts on the banks of the fabled Stix.

Like all new countries which are fertile the Genesee country was unhealthy and the exaggerated and frightful stories were told, for sometime prevented its rapid settlement. The prejudices then excited are even at this time not entirely done away, although it has long since become a remarkably healthy portion of the state, and the counties of Ontario and Genesee are surpassed by none for fertility of soil and salubrity of climate. In fact, the whole country from Utica to Buffalo is incomparably fine—it comprehends every variety of soil, produces grain and fruit in abundance and of the greatest perfection, has a climate neither enervating by intense heat nor cramping the mental energies by intense cold, a sufficient degree of industry is required to prevent luxury and effeminacy and leisure granted to expand the soul, without which the

the banks of the Erie Canal at Lyell Street. Some of the bridges built later were swept away by floods and had to be rebuilt. The old Carthage bridge, completed in 1819, at the site of the present Driving Park Avenue bridge, was described as one of the wonders of the world with one arch, its floor 196 feet above the water. It fell fifteen months after completion, at a great loss to the city as the builder had given but one year's guarantee.¹¹

Rochester was incorporated in 1817 and in 1822 its name was changed to Rochester although it was not incorporated as such until 1834. It was settled in 1812 and was formed as a village from the townships of Brighton and Gates and named after Colonel Nathaniel Rochester of Maryland, one of the three owners of the One Hundred Acre Tract.¹² Some of Rochester's neighbors were settled earlier, Pittsford in 1790 and Charlotte in 1793.* Hanford¹² has given us some interesting information regarding the founding of some of the surrounding villages. Brighton was named after the English city of that name and settled in 1814. Chili, whose first resident, James Morgan, a Revolutionary soldier, came there in 1792, was probably named after Chili, South America.

Clarkson was settled in 1819 and Gates in 1802, the latter first being called Northampton and renamed a little later Greece. It was formed in 1822 and it is quite likely that it was named after the Kingdom of that name as it had a revolution the year before. Hamlin was created much later (1852) and was called Union until 1861 when it was rechristened in honor of Hannibal Hamlin, Lincoln's vice-president. Henrietta called after Henrietta Laura, Countess of Bath, was settled in 1818. Mendon, probably named after Mendon, Massachusetts, was created in 1812 and in 1817 came Ogden,

so-called in honor of William Ogden of Parma. Carthage was once a flourishing village situated at the lower falls of the Genesee and was named after the ancient city of that name in Africa. The word itself means "New Town" and this village was gradually absorbed into Rochester. Hanford's Landing was another important village of that time which no longer exists. It was across the river from Carthage, at the head of navigation in that stream. Its first title was King's Landing, named for Gideon King, an early settler but renamed in 1910 when the Hanford's five brothers and two sisters opened a store there and later a hotel and did a thriving business.

Rochester was once termed the "City of Mud in a Dismal Swamp." It is difficult to picture our Rochester of today, known widely as a city of natural beauty, as having sprung out of such an unattractive region. Turner tells us that in 1800 Wheelock Wood built a sawmill which operated for only one season as the workmen all came down with fever and the mill had to be abandoned. At the time that Monroe County was formed, Rochester was objected to as a county seat and it was derisively remarked that there were better places than "Shingletown," meaning Rochester, for the county seat.

Rochester had a mushroom growth. Charlotte, situated on the Lake at the mouth of the river had flourished earlier but now settled down to a minor place and Tryon, a town of which much had been expected, died out entirely. By 1816-17 Rochester had become an important wheat market and in 1838 it was said to be the largest flour market in the world. In 1830 it ranked twenty-first in size in the United States. The *Gazette* which we have quoted before, stated in September, 1820

Our village for a few weeks past has literally been filled with strangers who all express their agreeable surprise at finding so large and pleasant a village where five years ago there was scarcely an inhabited building. The village contains about 1,700 inhabitants and is second to none west of Utica either in commercial or manufacturing business. There were four "flouring" mills in the place and when Congress shall in their wisdom see fit to reanimate the manufacturing interest of the country, the enterprise of the inhabitants of Rochester will soon develop itself in lining the banks of our river with manufacturing establishments.

* "When Buffalo, Batavia, Canandaigua, Geneva, Palmyra, Penn Yan, Bath, Genesee, Caledonia and Leroy had become considerable villages and local business had begun to center at Pittsford, Penfield, Victor, Lyons, Vienna, Manchester, East Bloomfield, Lima, Avon, Dansville, Angelica, Warsaw, Attica, Lewiston, Oak Orchard, Gaines, Clarkson, Parma, Charlotte, Handsford Landing and Scottsville, sufficient for clusters of little stores, machine shops and dwellings, at Genesee Falls, now known as Rochester, were but a few rude dwellings and a rude mill with less than six families" (Turner).

conditions under which they had to labor. They came to a sickly land crying for medical help. Dr William W Reid, a pioneer physician said "

The name Genesee Country was formerly associated strongly in Eastern minds with ideas of sickness and death. Those remaining behind in New England thought it a valley of bones, a permanent burying place for those loved friends and relatives who were tempted to settle in this then newly opened territory. Intermittent fevers, remittent fevers and cholera morbus carried away to an early grave many early settlers. Rochester was at that time a small village, its streets ungraded and undrained, the forest encroaching upon its suburbs, the stumps of recently felled trees mingling with the buildings, the soil a deep vegetative mould that had been accumulating for ages and covered with decaying matter—what wonder that malaria and malaric disorders should prevail, that ague at its worst and most diversified forms, should abound?

John Maude²⁵ visited this part of the country in 1800 and in his diary he wrote during August that he had not yet seen a case of intermittent fever or any other fever in the Genesee Country, although the insalubrity of the region was proverbial because of fever and ague termed the Genesee Fever. His friends had earnestly cautioned him against spending even one night in the vicinity of the Genesee and one of his acquaintances had given him some doses of St. James' Powders to take with him but he had no occasion to use them. Again in October, he spoke of the unjust reports regarding the malignancy of the Genesee Fever but added that an old schoolmate, Mr Dennison of Nottingham "would have been added to the list of its martyrs, had not the benevolence of Captain Williamson interfered." Many others of his acquaintance, he stated, had been seized with the fever, indeed few of them escaped.

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A few years later, the same paper stated that reports were being circulated erroneously regarding the sickness in this village and causing much alarm abroad. It had been reported that seven or eight died each day and that the inhabitants of adjoining towns did not venture to approach the "infected district." The readers were assured that the general good health of the place equalled that of any other having 40,000 inhabitants. "During the second week in this month when the weather had become extremely hot and dry, we had considerable rain which favored the progress of the cholera morbus, several cases and five or six deaths occurred within a few days but we have heard of only one new case for the last ten days." The following week one case was reported but many children had died of bowel complaint.

By 1828 the fevers became mild and infrequent, and seldom fatal. The *Telegraph*, stated in July of that year

Notwithstanding the many cases of fever and ague early in Spring, it has been remarked to us by several physicians that never within their knowledge was Rochester so healthy as it has been for a couple of months and is now. The coolness of the weather seems to have had a very salutary effect. The fact that our population large as it is, is almost wholly composed of persons in the prime of life,—for few of the aged or infirm would be tempted by the hope of gain, to leave their Eastern homes for this new field of enterprise,—also furnished a reason for the small proportion of deaths in this place in comparison with the mortality in older places of similar size.

Yet, as Dr Reid informs us, as wealth, refinement, luxury, and ease increased

noble and disinterested traits of character would be lost in the mercenary and selfish. But the western part of the state of New York is not more distinguished for wealth and fertility of the soil than the wonderful and attractive variety of its scenery. Our own little village is not the least attractive of the many objects of curiosity that abound and we venture to say, the ruins of Carthage Bridge, the three falls of the Genesee River, together with the water works of this village form a more beautiful, wild, romantic and useful display of nature and art combined than can be found in the world. Why those who have taken it upon themselves to describe the many natural curiosities of the country have until recently passed the falls of the Genesee River in silence, we cannot explain, unless the powerful interest which the Niagara Falls in this vicinity excite, like Aaron's rod, swallowed up the rest. It is true, neither of the falls in this vicinity will compare in magnitude with the Niagara, there is not that thought-suspending, overpowering grandeur, that awful magnificence whose frown terrifies the glance its magnificence attracts, that makes "the soul shrink back upon itself and startle at destruction," but all combined they form an attraction little less powerfully interesting.

We have quoted this editorial thus in its entirety, for two reasons *first*, because it gives us a vivid picture of early Rochester and *second*, because the culture shown by the writer is greater than we might expect of that time in Rochester. The publisher and editor of the paper and perhaps, the writer of the editorial, was Augustine F. Dauby.

Let us digress for a short time to quote other items from the early Rochester papers. So few take the time to read these old newspapers that these interesting bits remain unknown. The *Telegraph* in 1823 contained an article on Boerhaave, famous physician and scholar, who, the article states, made a will ordering that all his books and manuscripts should be burnt with the exception of one large volume with gilt-edged leaves and silver clasps. The "physical people," meaning no doubt, the unwell, flocked to Leyden and beseeched the executor to disregard the order. Boerhaave's effects were sold at auction and a German count, believing that the gilt book "contained the whole arcanum of physis" purchased it for 10,000 guilders. Upon opening his new purchase, he found all the pages blank except the first one upon which was written "Keep the Head cool, the Feet

warm and the Body open and bid defiance to the Physician." Another delightful piece of news is given in that paper the same year, this time regarding Dr. Benjamin Franklin. It states, "The directors of the Athenaeum have lately purchased a large number of pamphlets which were formerly the property of this philosopher. Many of them are particularly valuable on account of the marginal notes which they have received from his hand. Some are of an amusing cast,—on the first page of a collection of extracts from the registry of the faculty of medicine in Paris, there is a vignette with this observation in the handwriting of Dr. Franklin, "It is remarkable that the arms of the faculty above should be three ducks with herbs in their mouths to prevent their pronouncing the motto, 'Quack, Quack, Quack.'"

Still another account in that paper a month later regarding Franklin is specially interesting and touching. It states that Dr. Franklin wrote on May 18, 1787 to his friend, C. Whately, Esquire

You are now seventy-eight and I am eighty-two. You tread upon my heels but though you have more strength and spirit, you cannot come up with me until I arrive at my journey's end, which must be very soon, for I have grown so old as to have buried most of the friends of my youth and I now often hear persons whom I knew when children, called Mr. Such-a-one, to distinguish them from their sons, now men grown and in business, so that by living twelve years beyond David's period, I seem to have intruded myself into the company of posterity when I ought to be abed and asleep. Yet had I gone at seventy, it would have cut off twelve of the most active years of my life, employed too in matters of the greatest importance, but whether I have been doing good or mischief, is for time to discover. I only know that I intended well and hope all well.

Those having the courage to toil through the old Rochester newspapers will be rewarded from time to time for all their labor by the discovery of such precious bits. Many of them, not being medical in character cannot be included here.

The question may be asked, what has all that has been here written regarding early Rochester, have to do with the medical history of Monroe County. We have given this brief outline of the establishing of Rochester and Monroe County in order that we may visualize the kind of country to which our early physicians came and the

conditions under which they had to labor. They came to a sickly land crying for medical help. Dr William W Reid, a pioneer physician said " "

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Yet, as Dr Reid informs us, as wealth, refinement, luxury, and ease increased,

"consumption gained ascendancy whereas in 1804 when fevers were raging, pulmonary consumption was almost unknown"

Other writers mentioned the early unhealthy conditions of this county. Dr Alexander Coventry, president of the New York State Medical Society in 1824 cited the Genesee country as an example of unhealthy wooded countries where the decay of deciduous trees with rotted leaves, cause gases poisonous to humans and said that from 1792 to 1795 inclusive, the proportion of the sick to the well according to population, was much greater in the Genesee country than in large cities, even in the seasons when malignant fevers prevailed.

Peck in his history of Rochester writes of 1812 with its cases of pleurisy and "pneumonia typhoids" followed by a formidable epidemic in spring and fall. Two years later came another but less severe epidemic followed in 1815 by an epidemic of dysentery. The *Rochester Advertiser* in 1830 reported that only one percent had died in the village, eighty-six were children under ten, twelve adults over sixty, and thirty-one deaths were caused by consumption and only twenty-five of fever. The writer added, "Few places of 11,000 or 12,000 can exhibit for an equal space fewer cases of mortality."

It is surprising to read in these early newspapers the frequency of the appearance of hydrophobia in Rochester and its vicinity. In 1831, the Board of Trustees of the village found it necessary to pass an ordinance prohibiting dogs to run at large within

the village and a notice was printed in the paper thereof and a penalty of ten dollars threatened. The notice added that anyone preferring a complaint of dogs at large and presenting witnesses, would receive half of the penalty enacted. Many articles appeared in the papers containing remedies for hydrophobia. In the following year, mention of the horrors of the disease appeared again in the newspapers and it was stated that two men and a child had been bitten in the village. One of these men had his bitten toes amputated to prevent spread of the disease. The citizens were again warned to restrain their dogs to keep children away from them.

Cholera epidemics played great havoc in this region in 1832, 1834, 1849, and 1852. We will discuss them at length a little later. Let us leave the consideration of sickness in the village for a time and learn something of the early practitioners.

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Chapter II

The Early Physicians and Druggists and General Health Conditions

Genesee fever Epidemics dysentery cholera First physicians Drugstores News paper advertisements, Epidemic reports of smallpox, cholera, First medical schools

The first physician to come to Rochester was Dr. Jonah Brown in 1813 at the age of twenty-two.¹ It is reported that a panther almost clawed him while he was visiting a patient near the rapids and that he "sang to keep the critter off." This kindly physician acted as doctor, nurse, and cook in stricken families. Lodgings then were impossible to obtain and during the winters of 1813-14, he slept on a floor with his saddlebags for a pillow and a horse blanket for covering. Sometimes he was called at night to Stone's tavern and there

had difficulty passing through the bar-room because the floor was packed with sleepers. It is said of this early physician that he finally became wealthy and in 1854 was worth \$100,000.00. Dr. Orrin Gibbs was second to arrive to practice medicine here. The first surgeon, for medicine and surgery were then practiced usually separately, was Dr. Simeon Hunt, who settled in Greece in 1812. It is told of this surgeon that Hamlet Scrantom rode on horseback to his home to get him to attend his daughter and Dr. Hunt performed a successful op-

eration upon the girl which required two hours to complete. Dr Hunt practiced in this vicinity for forty or more years, settling in Greece as successor to Dr Zaccheus Colby, a surgeon of Stone's Dragoons in the War of 1812. Another practitioner was Dr John G Vought, whose name appears so frequently in the advertising columns of the papers. Dr Levi Ward, too, was an early settler, coming to Rochester in 1817 and "was one of the first to break into the wilderness north of the old Buffalo Road." He had settled with his large family in LeRoy in 1807 and in 1812 commanded a company of soldiers raised in Bergen, which however, never saw action. Dr Ward transported the weekly mail, Turner tells us, between Caledonia and Charlotte and the postage received was his remuneration. The same writer quotes Dr Abel Baldwin, another early resident of LeRoy, as saying, "When I moved into the country in 1811 with my family, we were ferried over the Genesee River at Rochester. The Ridge Road was cut only wide enough for a wagon track and the streams were crossed by means of log bridges."

Dr Fred F Backus was the son of Azel Backus, D D, president of Hamilton College in 1813. He graduated from Yale at the age of nineteen in 1813 and came to Rochester three years later, afterwards becoming a leading citizen, acting as president of the Monroe County Medical Society in 1822, first alderman of Rochester in 1834 of the Third Ward, which included all inhabitants on the west side of the Genesee River and south of the Erie Canal and Buffalo street.²

In 1843, Dr Backus became a member of the State Senate. There is much that could be told of this eminent citizen but as we are concerned with the history of organized medicine rather than with that of individual practitioners, his story must be omitted here. Dr John B Elwood, another physician of note, was born in 1792 and came to Rochester in 1817, became treasurer of the village in 1827, later postmaster, then mayor. Dr Azel Ensworth was another eminent man, arriving in 1816 and living to over ninety years of age.

Dr Hartwell Carver was a prominent physician of Pittsford, born in 1789, a descendant of John Carver of Mayflower fame and graduating from Yale in 1816 with A.M. and M.D. degrees, then settling

in Pittsford in April 1816, in debt to the amount of two thousand dollars for his education. Evidently his practice was extensive and remunerative, for in a year he cleared \$1,500 00 in his practice, a large amount for those days. He entered business six years later and retired three years after (1825). He spent his winters in the south and practiced medicine during the summer months in Monroe County until 1831 when he went to Europe for a year's study, then practiced extensively in Rochester.¹

The following are some of the early practitioners and where they lived

Brighton—Dr O E Gibbs, 1814, appointed Surrogate of Monroe County, 1823

King's Settlement, at mouth of the Genesee River—Dr Zaccheus Colby, and Dr Sylvester Atkinson

Riga—Dr John Darling, succeeded by Dr Richard Dibble.

Ogden—Dr Gibbon Jewett, practiced many years, died 1823

Parma—Dr John D Higgins, Dr John Scott.

Pittsford—Dr John Ray, Dr Daniel Rood, succeeded by Dr Achilles, Dr G Smith and Dr Hartwell Carver

Mendon—Dr Knickerbocker, later of Rochester, succeeded by Dr Harvey Allen.

East Mendon—Dr William Brown, later of Pembroke.

Rush—Dr Alexander Kelsey, 1811, Dr Socrates Smith, 1812

Scottsville—Dr Guthrie, Dr S S Brown, succeeded by Dr Freeman Edson, 1814 who died 1883 after a distinguished life.

Mumfords—Dr Power

An interesting case of Dr Joseph Camp, a student of Dr Carver of Pittsford, is related in the *Rochester Telegraph* of September 1822. It is a testimonial from a Henry Gale of Perinton, who said that Dr Camp had cured Mrs Gale of a cancer by applying for three months, an original preparation, a vegetable production, which "caused the cancer to come out of her body with all its many roots."

Dr Abel Baldwin came to Clarkson in 1811 and practiced but a few years, opening a public house at 1815 at Murry Corners. Later he built the first tavern house on the Ridge Road and retired to become a farmer in 1825. Dr Azel Ensworth who came to Rochester in 1816 opened his home to the first court hearing of the County of Monroe.

It is through careful scanning of early newspapers of Rochester that we learn of

many early physicians and also of the early pharmacists and other purveyors of medicine. In a weekly called the *Rochester Telegraph*, we read in an 1820 issue that Silas Smith's Cash Store carried drugs and medicines as well as groceries and dry goods and that Everhard Peck, a pioneer printer, publisher, and bookseller, offered in addition to various books of many sorts, twenty-nine medical books at a price of \$1 00 to \$4 50 per volume. Except for cough drops and such simple remedies, he carried no drugs but he advertised with high recommendations, certain medical journals, the principal one being the *American Journal of Medical Science*, a publication which has been continued to this day. It was Everhard Peck's son, William F Peck, a semi-invalid who spent his life on crutches, to whom we are indebted for most of our knowledge of the history of early Rochester.

Dr Fred F Backus, the leading physician of his time in Rochester, whom we mentioned before, had the first village drugstore, his advertisement appearing in November 1818. He added a soda fountain the following year and at the end of the year his store was burned in a fire which consumed several buildings. He reopened in February 1820. The next drug store was that of Mr William Pitkin, at 19 Buffalo Street, his advertisement appearing first in December 1820 in the *Telegraph* and continuing to occupy many columns of newspaper space until 1852 when Paine and Swan, former clerks of Lansing Swan, a druggist opening his store in 1852, purchased the old stand. These young men had previously purchased the Swan store. Later, C F Paine secured entire interest in the store which later became known as the Paine Company Drugstore, which remains today. The Post Drugstore, another old store still remaining in Rochester, was opened in 1835.

The old druggists were evidently prominent men, for Pitkin became mayor of Rochester and Swan while not elected, was honored by being nominated for that office. We find Caleb Hammond opening a drugstore, advertised on January 16, 1821, a little more than a year after Pitkin's store was opened. The drugstores frequently carried half-column advertisements enumerating the merits of a favorite patent medicine, claiming cures for all ills, Dr

Backus' store no less than the others. For example, in 1822 he advertised some "anti-dyspeptic pills," 100 for one dollar, which would cure "irregularity of bowels, obstinate costiveness, violent headache, yellowness of the eyes, acidity of the stomach after eating, flatulence, bitter taste in the morning, fetid breath, drowsiness after dinner, debility, lassitude, emaciation, depression of spirits and piles." Peck ran a lengthy description of the curative powers of Anderson's Cough Drops while Pitkin advertised a Vegetable Pulmonic Detergent. There were at that time four drugstores, Backus', Elwood and Coleman's, Hammond's, and Pitkin's. A Doctor Harral had a drugstore at the corner of Buffalo and Carroll Streets, conducting it with his practice and advertised patent medicine extensively. We read with amusement the following article in the *Rochester Telegraph* in 1828.

Dr Harral, formerly of this village, has become a rival of Dr Scudder at New York in the insertion of artificial eyes. He lately repaired in this way, the frontispiece of a Westphalian soldier who lost his eye at the battle of Smolensko. The *New York Courier* says that the Westphalian is so delighted with his acquisition that he is determined upon courting a widow at once. To do this, a man should have both his eyes open and so has Ferdinand. Dr Harral imports these artificial eyes from Paris.

Hitchcock in 1822 carried an advertisement offering drugs and medicines along with dye stuff, paints, oils, wines, liquors, and groceries "at a small advance on wholesale prices." Pitkin in the same issue stated that he sold dye stuffs, paints, drugs and medicines, rifles and musket powder on better terms than could be obtained from Utica or Albany and that he would accept country produce in exchange. Dr Richard Dibble, a druggist on Carroll Street, advertised in 1829, "It is not intended that the druggist business shall interfere with the practice of medicine. All professional calls will be promptly attended to." We note that competition in selling merchandise came early in Rochester. In January 1823, the paper contained an advertisement of a patent medicine for sale by the following

Rochester	William Pitkin, G Hitchcock
Penfield	G Penfield
Greece	B King

Charlotte	Bushnell and Company
Oak Orchard	Dr Stevens
Chili	William Pixley and Company
Webster's Mills	I Webster
Avon	J Pierce
Scottsville	W H Hanford
Churchville	H Hall
Parna	William McKnight

We cannot help being impressed by the enterprise of the patent medicine makers in spreading their products in those days of difficult travel and their appreciation of the benefit to be derived from advertising. Indeed, so much space was devoted to patent medicine advertising that much of the financing necessary for publishing the newspapers must have been obtained from that source.

Another early custom which we note with interest was the insertion of notices, or cards, in the newspapers by physicians newly arrived in town. These advertisements ran for a number of issues and were usually little more than a notice that the new doctor was ready to serve any patients presenting themselves. One appeared in the second issue of the *Rochester Telegraph* on July 14 1818, in which Dr Hartwell Carver "informs the public that he has settled himself as a physician and surgeon at Murry's Four Corners where he will attend to all calls both in the practice of physic and surgery and particularly to all operations in surgery." This notice ran for three issues. Doctors Elwood and Colman advertised May 13, 1819 that they would vaccinate with "Genuine Kine Pox Matter" and that "emigrants recently arrived and indigent families will be vaccinated gratuitously by calling at our office." From reading this early notice we know that when Rochester was only two years old as an incorporated village, it had not only its poor but its physicians ready to care for them without remuneration. We find no other profession offering free service. Does it not seem strange that in a changing world, with customs, beliefs, and ideas altering with the years, that the altruism of the medical men has endured.

Two months after Elwood and Colman's advertisement appeared, Dr Vought offered free vaccination to the poor and a year later he entreated the poor to come and be vaccinated. Evidently that was considered oversolicitous, for Elwood and Col-

man inserted a notice offering pure kine pox vaccine "with which we offer, not beg, to vaccinate families." Not only was it a custom at that time for physicians, lawyers, and dentists to insert a notice in the newspapers mentioning the opening of an office in the village but also notices appeared asking the debtors to settle their obligations. We find such notices appearing frequently and expressed in rather urgent language, for at that time debtors were jailed for unpaid debts.

From the newspapers we learn of the epidemics of the time. On February 17, 1827, the *Rochester Observer* reported eight deaths from smallpox the previous week, seven the week before, and eleven the week before that. As an illustration of the horror in which this dread disease was held and the ignorance concerning it, the *Gazette* in 1820 gave this humorous story. A man was burying a smallpox victim in a cemetery when a woman approached him and objected "You can not bury him here beside my husband," she cried, "he never had it." In 1830 another Rochester paper, the *Advertiser*, stated that this "loathsome disease no longer affects the village," adding that there were only three or four genuine cases and seven or eight modified cases and no deaths. In 1833 the same paper reports a new outbreak in the village, stating that the Board of Health had commissioned two physicians, Dr Reid and an assistant, to go from house to house through the town. It took two months for the two doctors to do this work, having to repeat their visits frequently in order to find the people in. They vaccinated all but about sixty people, a few of whom had suffered from the disease and the rest objected to vaccination. Dr Reid warned the public that unless all were vaccinated, the village could not be freed from the pestilence.

We mentioned cholera as a great destroyer in early Rochester life. In the first epidemic, that of 1832, a Board of Health was appointed, consisting of Dr Ward, Dr Coleman, Dr Reid, Mr Everard Peck, and Mr Asbek W Riley. Dr MacPherson of Scottsville added his services to the cholera victims in Rochester. Dr Colman went to Montreal to study the treatment of the disease there. The first case of cholera, according to Peck's history, occurred in a tavern on St. Paul Street below Court

Street (now South Avenue) on June 22, 1832 Mr Riley attended this man but he died the same day and was buried in an old burying ground on Monroe Avenue, the present site of Monroe High School All the cholera victims of that year were buried on that spot During July and August while the epidemic raged, business and travel almost ceased Camphor, a preventive medicine of the time, was much in demand and rose in price from thirty cents a pound to several dollars Brandy and calomel, too, were favorite remedies A temporary hospital was erected in the western part of the city on the banks of the Erie Canal Mr Riley of the Board of Health was the hero of the time, caring for the sick and burying the dead He is said to have placed eighty of the 118 victims in their coffins

A third scourge visited Rochester in 1849 and this time claimed 160 victims Again in 1852 came another epidemic and a building on High Street, later named Caledonia Avenue, was used as an emergency hospital with Dr Richard Gundry in charge A lengthy report of this visitation of cholera was written by Drs E M Armstrong, D M Dewey and Hiram Baker We learn that there were 700 cases in that awful epidemic and that 420 persons or one per cent of the population died Three of the victims were physicians, Dr J J Treat, Dr William Bell, and Dr D C Phelps Dr Mott who took an active part in checking the epidemic of that year, said that there was such a fear of the disease that on crossing Main Street at noon one day that summer, he saw not a soul on it.

Just one case of smallpox appeared in 1863 but in 1872 there were 150 cases, twenty-eight of which were fatal In March of that same year there was an outbreak of cerebrospinal meningitis with twenty-eight deaths In 1882 there came another smallpox scare but the Board of Health "pre-

vented it by prompt action" We find a similar statement away back in 1820 in the *Rochester Telegraph* which states that Mr Thaddeus Spencer of the village upon his return from a visit in Canada, had smallpox but "prompt and effectual measures prevented contagion" and requested that Rochesterians dogs not be permitted to run at large and communicate smallpox The newspaper of the following week contained a notice from the Board of Health that a Stebbins baby, living in the same house with Mr Spencer, had contracted smallpox It stated that the baby had been repeatedly vaccinated without effect and it was not certain but what the sickness was due to vaccine The public was asked to keep away and the report was signed by the Commissioners of Health, Dr Levi Ward Jr, M Brown, Jr, and H R Bender It is in the newspapers of that same year in which we read so many advertisements offering pure lime pox vaccines for sale. One by Stephen B Bartlett offered a certificate from respectable physicians that the vaccine was genuine In keeping with the publicity given to the use of vaccines that year, we note with interest that a recommendation was made at the New York State Medical meeting in Albany in 1829, that the Society recommend to the Legislature a law establishing a State Vaccine Institution

We have been considering general health conditions in the early life of the village, the personnel of its medical men, the sale of drugs and medicines, and the epidemics which swept through the village in those days Let us next turn to organized medicine in its initiation in Rochester

References

- 1 Kelsey Lives and Reminiscences of the Pioneers of Rochester, 1854
- 2 Peck History of Rochester
- 3 Pond C. F. Roch. Hist. Soc., vol. 1

(To be continued in the next issue)

MEDICAL GOLF NOTE

"You are senile, old man," the young golfer said,

"And you swing like an awkward old cow,

Yet your score is consistently over my head,
Won't you tell me the why and the how?"

"In the days long ago," the old man answered back,

"How I practiced through sunshine and storm,

But now I step up and just hit her a whack,
And I don't give a damn about form"

—C G Farnum, M D, *Peoria Medical News*

Medical News

Secretaries of County and local Medical Societies are requested to send the programs of coming meetings to this department one month in advance, for the information of members who may be interested.

Delaware County

NO "OLD AGE SECURITY" plan seems needed for Delaware county doctors. Dr J A Holley, of Walton, celebrated his eighty-second birthday a few weeks ago, had a dinner party at his home, and, according to the local paper, "is still active in the practice of his profession and keenly interested in the affairs of the community." And a few miles away, says an Oneonta paper, "Serving three vicinity communities for more than sixty-two years, Dr Frederick N Winans of Franklin has the unique distinction of being the oldest medical practitioner in this section, both in age and in years of service. Now in his eighty-fifth year, Dr Winans continues to serve as capably as he did when he first opened an office in Cobleskill in 1874.

"The veteran physician is as active as a man half his years and a midnight call in the dead of winter is as cheerfully answered as a half century ago.

"The doctor was married for the second time last spring."

Errie County

UPON RECEIVING A COMMUNICATION from Dr Winfield Ney, of New York, urging that the doctor's free contributions in medical service should be deductible in income tax returns, the editor of the Errie County *Bulletin* recalls a calculation made by Dr John L Hoffman, of the County Economics Committee, that free medical and surgical services by Errie county practitioners amounted for the year 1933 to a total of \$916,612, for 1934 to \$994,477 and for 1935 to \$1,114,682.

Franklin County

DR. DAISY VAN DYKE of Malone was elected president of the Franklin County Medical Society at a meeting held Oct. 21 in Malone. She succeeds Dr Edward N Packard.

Other officers elected were Dr D M Brumfiel Saranac Lake, vice-president, and Dr F F Finney, Malone, secretary and treasurer.

Dr Russell B Cecil of New York was the principal speaker, his subject being the diagnosis and treatment of pneumonia.

Kings County

AFTER CELEBRATING ITS first birthday,

the Bushwick District Health Center, a city enterprise, at 186 Grove St., Brooklyn, can point to several important accomplishments during its initial year, according to Dr Anna E. R. Robinson, district health officer.

Reducing the locality's diphtheria cases from the highest in the city to one of the lowest was an outstanding activity of the center's first year program, Dr Robinson said.

"During 1934, the Bushwick Health District, with about 3 per cent of the population of the entire city, had 12 per cent of all cases and deaths from this disease," she said.

"Bushwick Health District formerly led in the number of cases of diphtheria in the city but today it is one of the lowest, because of the intensive health education campaign launched by the center."

As against 139 diphtheria cases, with thirteen deaths, in 1934, and fifty cases, with four deaths, in 1935, there have been only twenty-four cases and no deaths for the first nine months of 1936 in that section, Dr Robinson added.

A marked decrease in the district's infant mortality has also been noted, Dr Robinson reported.

THE MEETING OF THE Bay Ridge Medical Society on Nov 10 was devoted to a discussion of cardiac disease. A paper on "Cardiac Edema" was presented by Dr John Hamilton Crawford, F.A.C.P., cardiologist at the Kings County Hospital and chief of the cardiac clinic of the Long Island Dispensary.

Madison County

DR. A J ZAIA of Oneida was elected president of the Madison County Medical Society at the annual meeting held Oct 27 at Oneida. He succeeds Dr Robert L Crockett.

Other officers named for the ensuing year include Dr John D Boyd, Chittenango vice-president, Dr Lee S Preston, secretary, reelected, Dr H S Germer, Canastota, treasurer.

Dr Zaia is delegate to the State Medical convention to be held next spring. Delegate to the fifth district branch is Dr Crockett.

Papers were given by Dr C C. Curtiss,

Syracuse, "Appendicitis in Childhood," Dr Ellery G. Allen, Syracuse, "Pernicious Anemia," and Dr Crockett, "Hematology." Lantern slides were shown to illustrate the talk given by Dr Allen.

Preceding the meeting, members of the Society and their wives met for dinner at 6:30.

The Women's Auxiliary of the Madison County Medical Society was organized, with Mrs. Otto Pfaff chosen as temporary chairman. The business meeting followed a dinner with members of the medical group.

A constitution and set of by-laws are yet to be drawn up and officers are to be elected. Mrs. Richard Cuthbert of Canastota is temporary secretary. Officers will be elected at the next meeting, December 10, at Oneida, at which time a Christmas party will also be held. Members of the Medical Society will be guests.

Committee for the constitution and by-laws is headed by Mrs. George F. Mills. Mrs. Charles Earl was appointed chairman of the nominating committee.

Arrangements for the December meeting are in charge of Mrs. Eugene W. Carpenter, Mrs. E. L. Finley and Mrs. Howard Beach.

Monroe County

THE UNIVERSITY OF ROCHESTER'S School of Medicine and Dentistry was host to doctors of Western New York, and to its own alumni, at a three-day post graduate medical conference on Nov. 5-7.

Lectures, demonstrations and research exhibits, revealing advances in medical science were included in the program.

THE DANGER OF LETTING medical bills run for years is being illustrated in Rochester, where a physician is trying to collect a bill for \$19,700, due for medical treatment over a twenty-four year period, from the estate of Rudolph Speth, late treasurer of the Eastman Kodak Co. The administrators are trying to claim that the bill was paid, while the doctor says only \$300 has been given him. The case is now in the courts.

Montgomery County

THE MEDICAL SOCIETY of the County of Montgomery listened to interesting papers on Oct. 28 at Amsterdam by Dr. Edward C. Reifenstein on "Management of Congestive Heart Failure," and by Dr. Joseph Wiseman on "Pneumonia."

New York County

DR. GEORGE WILSON MURDOCK, the oldest

living alumnus of the College of Physicians and Surgeons, Columbia University, died on Oct. 29. He was ninety-three years old and since 1900 had passed most of his time in England and on the Riviera. His home was formerly at Cold-Spring-on-Hudson, N. Y.

When fourteen he ran away to the Indian Wars. During the Civil War he served first as a hospital steward in the First Minnesota Cavalry, then with General Sibley in the campaign against the Sioux Indians and finally with a Michigan regiment in Sherman's army. He was appointed an army surgeon before he had completed his medical course, started at the University of Michigan.

DR. MEYER R. ROBINSON, gynecologist and obstetrician, who had served as attending surgeon at the Beth Israel Hospital many years, died at his home, 130 East End Avenue, on Nov. 2, after several weeks' illness. He was sixty-one.

Onondaga County

THE LAY FEATURES OF THE life-saving campaign to be conducted in Syracuse by the Maternal Welfare Committee of the Onondaga Medical Society, beginning in January and continuing through the winter, will include an educational crusade to induce more expectant mothers in straitened financial circumstances to take advantage of the free opportunities for prenatal care.

In this free prenatal service and maternal care three agencies co-operate. They are the College of Medicine of Syracuse University, the Nursing Bureau of the Department of Health and the Visiting Nurses Association.

There are now nine prenatal clinics in Syracuse, eight of which are staffed by nurses of the City Health Department and five in neighborhood centers.

The five neighborhood center clinics have medical staffs from the Obstetrical Department of the College of Medicine. The other clinics are served by physicians of the hospital staffs.

The records show that fifty-five per cent of the patients went to the clinics in the first five months of their expectant motherhood, which the Maternal Welfare Committee pronounces "an outstanding record."

All patients whose condition is found normal have their babies at home. Others are cared for in hospitals. Patients are seen at least every two weeks during the prenatal period and at least every week during the last six weeks.

Senior students of the Obstetrical Department of the Medical College care for

the mothers whose children are born at home, assisted by a visiting nurse. During 1935 there were 290 babies born in Syracuse under these circumstances

In Syracuse the deaths in each 1,000 births averaged nine in 1927. By 1935 this had been reduced to 37

"While these figures show marked improvement, they might be bettered," the Maternal Welfare Committee states, and that is the object of the coming winter campaign, which will include addresses by members of the Onondaga Medical Society to social, service, professional and other organizations of women in the city and throughout the county

Orange County

DR. EDWARD CARY RUSHMORE, medical director of the Tuxedo Hospital, which he helped establish in 1908, and president of the Orange County Medical Society, died at his home at Tuxedo Park Nov 2 at the age of seventy-four after an illness of several weeks

Dr Rushmore was president of the First District Branch of the New York State Medical Society

In the nineties Dr Rushmore, with several Tuxedo friends, became a pioneer in popularizing golf in the United States. He was one of the low handicap men of that day

He was captain in 1894 of the first team of American golfers to play abroad. Dr Rushmore won a driving contest, but the team was defeated by British players at St. Andrews

The doctor was also a tennis internationalist before the days of the Davis Cup

Orleans County

DR. FREEMONT W. SCOTT, eighty, dean of Orleans County physicians, and a former resident of Corfu, where he practiced a number of years ago, died Oct. 19 at the Medina Memorial Hospital after several years' illness

Dr Scott, who had been engaged in the practice of medicine for fifty years, was a past president of the Orleans County Medical Association, and an honorary member of the staff of Medina Memorial Hospital. At one time he maintained a stable of race horses for competition in county fair races

Oswego County

AT THE ANNUAL MEETING of the Medical Society of Oswego County held at the

Elks' home, Fulton, on Oct. 13, the following officers were elected for 1937

President, Dr O J Mowry, Minetto, vice-president, Dr K. W. Jarvis, Oswego, secretary, Dr J J Brennan, Oswego, treasurer, Dr J B Ringland, censor, Dr S D Keller, Fulton, chairman legislative committee, Dr E J Dillon, Phoenix, chairman public health and medical education committee, Dr John Hollis, Parish, chairman economics committee, Dr L De L Pulsifer, Mexico, chairman public relations committee, Dr C K. Elder, Oswego, delegate to state society, Dr R. F. Wolever, Fulton, alternate, Dr O J Mowry

A resolution was adopted endorsing the action taken by the Academy of Medicine of the city of Oswego in their attempt to obtain from the department of welfare remuneration for the care of hospitalized indigent patients

THE 115TH ANNIVERSARY of the Medical Society of Oswego County was celebrated by a dinner-meeting at the Pontiac Hotel in Oswego on Nov 12. The speaker was William D Johnson, M.D., F.A.C.S. of Batavia, past president of the Medical Society of the State of New York, and the subject, "Abdominal Catastrophes." Discussion by Grant C Madill, M.D., F.A.C.S., Ogdensburg, Albert G Swift, M.D., F.A.C.S., Syracuse, Professor of Surgery at the University of Syracuse, Hyzer W Jones, M.D., F.A.C.S., Utica

Queens County

FORMATION OF A SPEAKERS' BUREAU, consisting of prominent Queens physicians, is announced by the Queens County Cancer Committee from its headquarters in the Medical Society Building

Among the doctors serving on the speakers' committee are Dr Carl Boettiger, honorary chairman of the Queens Cancer Committee and chairman of the public health and public relations committee of the Queens County Medical Society, Dr William Hoffman, chief of the cancer clinic at St. John's Hospital, Long Island City, Dr Albert L Voltz, Dr Rudolph Boenke, Dr Ida Mintzer, Dr Francis Raley, Dr Joseph Thomas, Dr Joseph Wrana and Dr Irving W Ponemon

The Medical Society cooperated with the Cancer Committee in selecting the speakers

The speakers will give addresses, under the auspices of the Queens Cancer Committee before mothers clubs, teachers' groups and church and other organizations on the prevention and control of cancer

MEDICAL NEWS

[N Y State J M]

THE ANNUAL MEETING of the Medical Society of the County of Queens was held on November 24. Dr Charles Gordon Heyd, President of the American Medical Association was guest speaker. His paper was entitled "Organized Medicine—A Service to the Community." Election of officers took place at this meeting.

THE DENTAL PROFESSION of Queens County met with the Medical Society on November 30 at the Society's building. The purpose of this meeting is to encourage cooperation between the professions.

Schoharie County

THE ANNUAL MEETING OF THE Schoharie County Medical Society was held at the Cobleskill central high school on Oct 13. At the business session the following officers were reelected for the ensuing year: President, Dr Duncan L Best of Middleburg, vice-president, Dr Carolyn L Olenodorf of Cobleskill, secretary, Dr Herbert L Odell of Sharon Springs, treasurer, Dr LeRoy Becker of Cobleskill, censor, Dr W T Rivenburgh of Middleburg, and delegate, Dr David W Beard of Cobleskill. At the scientific session papers were read by Dr E K Cravener and Dr C W Woodall, both of Schenectady.

Westchester County

AN INTERESTING AND NOVEL EXPERIMENT in health education began to take form on October 5, at a dinner tendered by the Westchester Cancer Committee to teachers of biology and general science in Westchester schools. This dinner-meeting was called to consider the formation of a "Westchester Institute of Science" by which the Cancer Committee proposes to reach students in public school with sound information about the nature of cancer, its prevention and the importance of early diagnosis. It is hoped to break down the phobia now generally associated with the mention of cancer.

The dinner was attended by approximately 125 teachers, superintendents of schools and physicians. Dr C C Little, President of the American Society for the Control of Cancer, spoke on the biological nature of cancer and the application of this knowledge to an educational program. Dr George T Pack of Memorial Hospital, New York, also spoke, setting forth various fundamental facts about cancer which must be the basis of any sound educational treatment of the problem. Mr John G Farrow, a science teacher in Scarsdale High School,

presided and introduced the speakers. Dr H R Charlton, Chairman of the Westchester Cancer Committee, related the plans and hopes of his Committee for the development of this work.

UNDER THE AUSPICES OF THE Social Service Department of Grasslands Hospital, a series of talks and round table discussions will be given during December, January, and February, on the general subject, "The Social Significance of Disease."

This project has arisen out of many requests coming from staff workers attached to the various welfare departments and unofficial social agencies throughout the county for some organized information in regard to the consequence of various types of illness among relief clients and persons partially dependent upon private or public aid, in terms of the extent, duration and nature of the disability brought about by the various illnesses and the special attention which should be made available by welfare agencies for persons afflicted with these conditions.

It has been found that in many cases, the instructions and the treatment prescribed by the physician failed to be carried out by the welfare workers who are assisting the patients and on the other hand, the services of the attending physician sometimes fall short of their maximum value through lack of knowledge of the true social condition of his patient. Between the lay welfare worker and the practicing physician stands the medical social worker who is presumed to understand at least to some extent both the social and the medical approach to the case. These talks and round table discussions are designed to explain the physician to the social worker and vice-versa, in connection with each of the major categories of illnesses.

ORGANIZATION OF PHYSICIANS to promote medical service to the community and to provide for the welfare of a larger future population is necessary today, Dr Charles G Heyd, president of the American Medical Association, told seventy-five medical men attending the annual dinner of the Yonkers Academy of Medicine at the Yonkers Golf Club, on Oct 21.

"Doctors should not be concerned with an abundant life, but with a useful life," Dr Heyd told his fellow physicians. "When a doctor enters the medical profession, he undertakes an obligation to humanity which can have no selfish motive."

According to Dr Heyd, a doctor's organization must be based on standards of practice of medicine and not on a plan of regulating hours of work or fees.

Although the medical profession is faced with economic problems, its members must concentrate on service to the public and must hope for better times, he said. He cited the problem of doctors in New York City, where, he said, 50 per cent of the people go to clinics, thus lowering the private fees of physicians.

Dr Nathan B. Van Etten, speaker of the house of delegates of the American Medical Association, asserted that medicine will thrive only when individual doctors assume militant roles as citizens. He criticized compulsory public health systems.

He termed plans for socialization, in whole or in part, "abracadabra systems," holding that the doctor is bound to lose out if they are adopted.

Dr Van Etten predicted that voluntary health insurance would inevitably lead to a compulsory system and attacked compulsory workmen's compensation insurance as an instance of the "harm in such a plan."

He concluded:

"The doctor fails only because he fails to be a potent citizen."

THE FOLLOWING OFFICERS for the coming

year were elected on Nov. 17 by the Westchester County Medical Society:

President, Dr. Morley T. Smith of New Rochelle, Vice-President, Dr. Erich H. Restin of Mount Vernon, Second Vice-President, Dr. Ralph T. B. Todd of Tarrytown, Secretary, Dr. Merwin E. Marsland of Mamaroneck, Treasurer, Dr. Harry Klapper of White Plains, Censors (Two Years), Dr. Theodore West of Port Chester, Dr. Andrew A. Eggston of Mount Vernon, Dr. Francis Carr of New Rochelle (Censors continued in office by election last year—), Dr. Harrison Betts of Yonkers, Dr. E. F. Briggs of Mount Kisco, Delegates (Two Years), Dr. R. B. Hammond of White Plains, Dr. Arthur F. Heyl of New Rochelle, Dr. Walter W. Mott of White Plains (Delegates continued in office by election last year—), Dr. Merwin E. Marsland of Mamaroneck, Dr. Romeo Roberto of Yonkers, Alternate Delegates (Two Years), Dr. L. W. Haynes of Bedford Hills, Dr. R. A. Higgins of Port Chester, Dr. J. G. Morrissey of Yonkers (Alternate Delegates continued in office by election last year—), Dr. William R. Roane of Irvington, Dr. Isadore Zadek of Mount Vernon.

TERMINATION OF ONE THOUSAND ATTACKS OF MIGRAINE

Dr. Mary E. O'Sullivan, New York City (*A. M. A.*, Oct. 10, 1936), states that ergotamine tartrate administered to ninety-seven patients checked or aborted 1,042 attacks in eighty-nine of these persons. It was calculated that the individuals in this series were relieved from 39,000 hours of suffering. The earlier in the attack the medication is given, the better are the results. When used subcutaneously, the alkaloid has never failed to check again an attack in a person previously relieved if the drug was given in adequate dosage. Un- toward effects of the drug may be relieved

by simultaneous injection of 1/100 grain of atropine or calcium gluconate intravenously. She does not consider the drug a cure for migraine. She strongly advises against its dispensation without a consideration of the cause and prevention of the syndrome. Because of the constancy and character of the relief obtained from 1,042 headaches in eighty-nine sufferers of migraine after the administration of ergotamine tartrate, she recommends its use for the termination of these attacks and believes that the drug is a valuable addition to medical therapeutics.

SALESMANSHIP IN MEDICINE

Certainly there is an important place in the practice of medicine for the practical application of psychology or salesmanship, remarks the *Journal-Lancet*, of Minneapolis. The real value and aid of a clean, light, airy, cheerful office, a pleasant attendant, and a physician who is a good salesman cannot be over-estimated.

All too many doctors neglect personal appearance, facial expression, pleasant voice, enthusiasm, and personal interest in

the patient, which are the fundamentals taught every salesman. The direct relationship between the doctor and patient has been allowed to assume a scientific basis rather than to consider the patient as an ordinary human being, with the usual sentiments and emotional reactions. The sentimental and personal relationship between doctor and patient should be the most pleasant and most sought-after reward of a busy practice.

Medicolegal

LORENZ J. BROSNAN, ESQ

Counsel, Medical Society of the State of New York

Limitation of Actions Against A Physician

One of the legal questions that repeatedly arises in connection with actions brought by patients against physicians is whether the action has been instituted within the statutory period of limitation. The general rule in New York State is that such actions must be commenced within two years after the cause of action accrues, and various other jurisdictions have a similar statutory period. Frequently a malpractice action is brought where the plaintiff either seeks by some device to extend the time that the cause of action "accrued," or to institute the action in such a form that it will be governed by rules of law applicable to types of actions other than those based upon alleged malpractice. An example of such an attempt to evade or avoid the operation of a two year statute of limitations recently was before the Courts of one of the New England States*.

The case was one in which the plaintiff's grievance against two physicians centered around an operation which they had performed upon her five and a half years prior to the date of the first papers served in the action. The charge was that the defendants B and C were negligent in the performance of the operation upon the plaintiff, A, and that it was unnecessary, unwise, and impractical. The complaint included the claim that the defendants had until thirteen months prior to the commencement of the action fraudulently concealed from the knowledge of A the fact that she had a cause of action. The answers served by the defendant physicians were the usual form of general denials, and the special defense that the actions were barred by the statute of limitations.

Upon the trial, the only evidence before the Court was that introduced by the plaintiff and her witnesses. It appeared that for some years prior to her contact with defendants, plaintiff had suffered from a condition diagnosed as a sacroiliac strain which followed a knee injury. She had consulted various doctors and had received certain treatment with apparently no improvement. When she consulted the defendants, according to A, she was placed under observation for a few days and an operation was advised. She claimed to have been told by

both B and C that if the operation was performed she would leave the hospital in six weeks, and be well in two months, and on those assurances she consented to undergo the proposed operation.

The operation was performed, and its purpose was described as being to produce a fixation of the right sacroiliac joint, by the insertion between the sacrum and ilium of a piece of bone from the ilium. The result was to be accomplished by the union of such piece of bone with the ilium and sacrum. The defendants attended the patient almost daily after the operation until she was discharged from the hospital about nine weeks later. Both doctors attended her on a certain occasion some months later during the same year.

The plaintiff's testimony was to the effect that from that year of the operation until the year before suit was started, her contact with the defendant B consisted of correspondence concerning her condition, and occasional personal consultation, and that her contact with C consisted of one consultation the year before she commenced her action. She claimed that on that occasion C had told her that the reason the operation was not a success was that they had used too small a piece of bone, and that if another operation was undertaken a larger piece of bone could be used to cause her to be well in a short time. According to A, C also told her that unless the proposed second operation was undergone she would always remain a cripple useless to herself and others. She further claimed that at the approximate time of the said conversation with C, B had given her the same sort of a story, and had advised a further operation at the hands of C. A also introduced expert testimony that the original operation had been improperly performed.

Upon such evidence, the Court directed a verdict in favor of each of the defendants ruling that the action against each of them was barred by the two year statute of limitations, and that the claim of fraud had not been sustained to justify her action against the doctors more than five years after the operation. The plaintiff appealed from the determination of the Trial Court, and the highest Court in the State affirmed the ruling. In so deciding the Appellate Court said in its opinion:

* Maloney vs Brachett 176 N E 604

The prediction by the defendants as to her recovery made before the operation was performed had no tendency to prove that the doctors did not in good faith consider the operation advisable. If it be a fact that she first discovered in July or August 1925 that too small a piece of bone had been used in the operation, this would not prove that the operation itself was unnecessary, unwise, and impractical. The testimony of an expert witness in reply to a long hypothetical question, asked by the plaintiff, that in his opinion the operation in 1921 was inadvisable, might justify a finding to that effect, but would have no tendency to prove that the defendants did not believe that the operation was advisable when made. The concealment to which the statute refers (permitting an action to be brought after the discovery of a cause of action fraudulently concealed) is of the cause of action and not of the injurious consequences following from it. Failure to state in detail the nature of the operation, concealment of facts concerning the plaintiff's condition after the operation, or concealment of the fact that too small a piece of bone had been used in the operation, or assurances then made as to her recovery could have no tendency to prove a fraudulent concealment of a cause of action for negligence based on performing an operation where none was needed. The plaintiff knew that she had been suffering from a sacroiliac strain for more than two years, that the operation was to be performed upon her right sacroiliac joint, and that before the operation a cast had been made upon her body to be used upon her after the operation had been completed. She testified that in October 1921, she asked the defendant B, if he would consider taking out the bone that had been put in, and again in the fall of 1922, she asked him to consider operating on her and taking out that bone. She had been treated by doctors in her home city of H after the operation, and was in a hospital in H in June 1924 for ten days. At this hospital, X-rays were taken and she was placed in a plaster cast. At some time prior to 1924, she had been examined by a doctor in Boston. She testified, in substance, that at all times since the operation her condition had been worse than before.

A cause of action cannot be said to be concealed from one who has a personal knowledge of the facts which create it." The rule that fraud cannot be presumed applies to a charge of fraudulent concealment of a cause of action. Ordinarily mere silence concerning the cause of action or failure to inform the plaintiff of the facts upon which her cause of action rests is not a fraudulent concealment within the meaning of the statute. The fraud referred to in the statute must be actually accomplished by positive acts done with the intention to deceive. If a defendant is a deliberate wrongdoer and is also charged with the duty to disclose his wrong to the plaintiff, the rule that a plaintiff is bound by knowledge of facts which might have been learned upon inquiry may not apply. But the failure of a doctor to disclose a cause of action to a patient could not be found to be a

breach of his professional duty without evidence that he knew or believed that a cause of action existed, and we discover no evidence that either defendant knew or believed that he had performed or assisted in the performance of an unnecessary operation, and none of such a violation of professional duty or concealment of facts as could establish a fraudulent concealment within the meaning of the statute. We are not concerned with the conduct of the defendants except in so far as it is material to this issue. Upon all the evidence considered in the light most favorable to the plaintiff, the order directing a verdict for the defendant in each case was right.

Death Following Removal of Stone from Ureter

A man thirty-nine years of age was referred to a physician specializing in surgery with respect to complaints of pain over the right kidney. He gave a history of having had attacks of renal colic and hematuria for several years. He was placed in a hospital under observation for x-ray and cystoscopic examination which revealed a stone in the right ureter. An operation was performed upon the patient for the removal of the stone under a general anesthesia, which operation was apparently successful. His convalescence was uneventful for five days when the patient complained of difficulty in opening his mouth and some stiffening of the muscles of his neck. Consultation was arranged between the surgeon and a neurologist with respect to his condition and a diagnosis was made that the patient was suffering from tetanus. Tetanus antitoxin was administered. Spinal fluid was found to be under pressure and a hemolytic streptococcus was revealed upon culture. Although all possible steps were taken to care for the patient he died within two days.

A postmortem examination indicated that the patient had suffered from an acute meningitis caused by staphylococcus aureus.

An administratrix of the deceased instituted an action against the surgeon in which the charge was made that negligence in the operation had produced the conditions which eventually caused the patient's death, that the symptoms after the operation had been incorrectly diagnosed and treated.

The plaintiff's attorney repeatedly attempted to induce a settlement of the case but no settlement was made. When the case was reached for trial no attorney appeared on behalf of the plaintiff to try the case and the Court on motion of defendant's counsel dismissed the action.

Across the Desk

A Mysterious Case Solved

A STORY IS GOING THE ROUNDS of the Medical press about a man who visited a Colorado physician and complained of pain and soreness just to the left of the sternum over the precordium. It was growing worse day by day. The doctor gave him a thorough physical and laboratory examination, explored his personal and family history—all in vain. If the doctor had been well up in psychiatry, perhaps he would have found out all about his dreams and night thoughts, too, but this was apparently neglected. The man was "physically strong and capable, ruddy, well-nourished," evidently prompt at meals, but, it appeared, "able to work only when under a boss's nose." He was "resting quietly in the most comfortable chair in the office."

All this seemed to point in one direction, and when further questions revealed that the patient was a WPA "worker," the medical man had the clue.

The painful area was at about the spot where a shovel would reach! Diagnosis "Osteochondralgia secondary to constant leaning on a shovel." This case assumes importance if our army of shovel-leaners is to continue in the coming years. It recalls the story of the WPA worker who complained bitterly to the boss that his feet were tired because he had no shovel to lean on like the rest. The moral drawn by a Western medical editor is that "it is your money and mine that has nurtured a generation of chisellers, and it will be our money and our sons' money that will carry them on."

Left-wingers are on the Wing

The question of the hour, with the medical profession, is whether the doctor will have to keep on supporting the "chisellers" by his taxes, and also give them medical attention at the pitifully low fees dictated by the relief authorities. This is a system that may glide easily into socialized medicine if the profession is not on its guard, and the election has encouraged all the left-wingers to urge their socialistic schemes more strongly than ever before. Washington dispatches say that the leftist labor forces led by Lewis and Major Berry

are out with a program of social legislation which they hope to rush through Congress and into the statute books under the impetus of the tidal political wave of November third. One plank is "Further liberalization of the Social Security Act to provide socialized medical care for low-income groups." And they evidently do not intend to have their program knocked on the head by the aged if wise jurists of the Supreme Court, either, for their concluding plank is the "inclusion of a provision in all new legislation forbidding its invalidation by the United States Supreme Court."

This amusing, not to say childish, idea recalls the equally clever device of certain European lawmakers some years ago who tacked a clause on their pet measures saying that "this law shall never be repealed." A later parliament, of course, merely had first to repeal the non-repeal clause, and then repeal the rest of the act. In the same way the sober justices, if they can keep their faces sober, may first declare the no-invalidation clauses invalid and then rip the laws, if unconstitutional, into as small pieces as they may like.

A Ride on the Merry-Go-Round

Another report from Washington, in a syndicated column called "Daily Washington Merry-Go-Round," pretends to say explicitly just what the President intends to do on every big question now before the country. Under the heading "Socialized Medicine," the writers of the column declare "This was knocked out of the Social Security Act by pressure from organized physicians, but it is now on the President's list of 'things to be done'." The net impression made by this downright declaration of what the President has in his mind on every subject is that it sounds a bit too cocksure to be authoritative. Perhaps we shall do best to take the authors at their own valuation and consider that they are just taking us for a ride on their merry-go-round, a delightful device that is loads of fun, but always brings us right back to the place where we started.

Let the President Speak for Himself

At any rate, we have to put over against this the statement made by the President himself a few weeks ago at the dedication of the Jersey City Medical Center. His expression on that occasion may well be preserved and kept on record for reference at any future time when and if the socialization of medicine seems to threaten us. As quoted in the *Journal of the AMA* on October 10, page 1226, he said:

The medical profession can rest assured that the Federal Administration contemplates no action detrimental to their interests. The action taken in the field of health as shown by the provisions of the splendid Social Security Act recently enacted is clear.

There are four provisions in the Social Security Act which deal with health, and these provisions received the support of outstanding doctors during the hearings before the Congress. The American Medical Association, the American Public Health Association and the State and Territorial Health Officers Conference came out in full support of the public health provisions.

This in itself assures that the health plans will be carried out in a manner compatible with our traditional social and political institutions. Let me make that point very clear.

The opinion is expressed in well-informed quarters that the President is not likely to advocate any policy opposed by organized medicine in this country.

An Appalling Leftist Proposal

At the same time we get a vivid glimpse of what the leftists can advocate by glancing across the water at what is happening in France, where a government of the left, or a "popular front," is in power. One of the left members has introduced a bill in the Chamber of Deputies providing that "no one can practice, even without pay, after the age of sixty-five years, as a lawyer, physician, veterinary, dentist, druggist, architect, surveyor, engineer, accountant, or as an executive in any commercial pursuit." No pension would be provided for those thus robbed of livelihood. A medical journalist is quoted in the *Presse Medicale* as saying that under this law he would be forced to retire in three months and by 1939 would either be in the soup line or be obliged to earn his living by singing in the streets, as many other unemployed are doing.

The idea of the bill is that it would give jobs to the younger men, but it is worth noting that among the strongest opponents of the bill is the Medical Students Association of France, and other young people are equally opposed to it, purely on the grounds of justice. Such a measure may seem like a figment of the brain of a dreamer, remarks the *Concours Médical*, yet there it is, actually before Parliament. There is little chance that it will pass, or even come to a vote, we are assured, but it is worth noting as an example of what our visionaries are capable of when they "get going."

A New Deal Health Miracle

So much has been said in criticism of various governmental agencies that it is a pleasure to report a striking example of great benefit to public health, credited to the much-berated New Deal. We find it set forth in fact and figures in the *Journal* of the South Carolina Medical Association, which is on the spot, and told by Dr. C. J. Milling, of Columbia, who supports his point with a wealth of statistics.

Perhaps not many are aware of the precipitous drop in pellagra cases in South Carolina and neighboring states since the start of the depression. The sharp fall in pellagra may seem all the more surprising when we recall that it is associated with poverty and malnutrition, and hence might perhaps be expected to increase, instead of decrease, with hard times. The pellagrins, says Dr. Milling, "is the victim of undernourishment, particularly in regard to protein and vitamin deficiency." Well, in 1928, the pellagrins constituted 28.5 per cent of all admissions to the South Carolina State Hospital, with 287 sufferers and 124 deaths. In 1929 there were 295 victims admitted, and 121 deaths. Then the depression struck, the New Deal came in, and in a few years a vastly different picture appeared. In 1935 the number of pellagrins admitted to the state hospital had dropped from 295 to 54, and the number of deaths from 121 to 20. Turning to the figures for the entire state, in 1929 there were 7849 cases, with 909 deaths, and in 1935 there were only 1991 cases with 310 deaths. A disease of poverty had dwindled incredibly as the people became poorer!

The Answer to the Riddle

What is the explanation? True, we may give a certain amount of credit to general educational enlightenment, to public health propaganda, and, as our informant notes, to the widespread adoption of brewer's yeast both as a preventive and a therapeutic measure. We may note, too, that the factory hands thrown out of work went back to the land and raised fresh foodstuffs, the very thing to combat pellagra, but all these together, thinks Dr Milling, would not account for the drop. The only other big factor in sight was the New Deal. "Is it not, therefore, reasonable to conclude that, in the free distribution of foodstuff, the creation of new jobs under the various relief agencies, the CCC camps and the di-

rect relief afforded by the Administration, we have the answer? I think the figures show too close a relation to the New Deal for us to disregard them. It is true that 1928 and 1929, the worst pellagra years, were the period when two cars were supposed to repose in every garage and a chicken in every pot, but they were also the years when money crops were raised to the exclusion of food crops, and when earnings went not into intelligently selected food, but into vacuum cleaners and radio sets."

Here is an intriguing chapter in the medical history of the Great Depression. No doubt others are still waiting to be written. The big fact is that while everything else slumped, the people's health did not slump. And that fact will stand forever as a shining monument to American medicine.

"SEVEN STEPS TO THE UNDERTAKER"

This term is used to designate seven fallacies about cancer entertained by some physicians, as found by Dr Frank L. Rector, Field Representative of the American Society for the Control of Cancer, in six years of travel and discussion in the Middle West. He lists the seven fallacies or "steps" as follows:

Step 1 "Efforts to enlighten the public about cancer only stimulate cancerphobia and increase morbid fears about the disease."

Step 2 "Cancer education drives the public to quacks."

Step 3 "The profession has no cure or even hope to offer the cancer patient."

Step 4 "Treatment often increases the patient's suffering."

Step 5 "By telling the patient the truth, his condition is often aggravated."

Step 6 "The patient will not cooperate in treatment."

Step 7 "A watchful waiting attitude on the part of the physician is often the best method to pursue."

NOT LIKE THE USUAL "WHITE ELEPHANT"

A young woman, Miss Joyce Victoria Deutsch, received the Mitchell Prize at the graduation exercises of the Long Island College of Medicine, given to "that member of the graduating class who in the judgment of the faculty is best qualified in all the departments of medicine." "Tall, pretty,

brown-haired, blue-eyed, slender despite her boasted 130 pounds," the twenty-two year-old medical maiden will enroll as an interne in pediatrics in the Brooklyn Jewish Hospital. In the rather breezy newspaper accounts she is said to lay all her success to a tiny silver elephant, a talisman.

A RECEPTION ROOM HINT

A clean, well-lighted, pleasantly furnished waiting room with small brightly painted chairs for children, comfortable chairs for the grown-ups, and up-to-date, untorn maga-

zines immediately put the patient into a good frame of mind. A neat, attractive receptionist always adds to this good impression.

A questionnaire reveals that the average British family pays the doctor £4 15s a

year. This will be news to the doctor.
—Punch, London

Books

Books for review should be sent directly to the Book Review Department at 1313 Bedford Avenue Brooklyn N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

RECEIVED

Proctology A Treatise on the Malformations, Injuries and Diseases of the Rectum, Anus and Pelvic Colon By Frank C Yeomans, M D Second edition Octavo of 661 pages, illustrated. New York, D Appleton-Century Company, 1936 Cloth, \$12 00

Administration of Workmen's Compensation. By Walter F Dodd Octavo of 845 pages New York, The Commonwealth Fund, 1936 Cloth, \$4 50

Research in Dementia Precox. (Past Attainments, Present Trends and Future Possibilities) By Nolan D C Lewis, M D Octavo of 320 pages New York, The National Committee for Mental Hygiene, 1936 Cloth, \$1 50

Psychiatry for Practitioners by Various Authors Edited by Henry A Christian, M D [Reprinted from Oxford Loose Leaf Medicine] Octavo of 646 pages New York, Oxford University Press, 1936 Cloth, \$6 50

Paget's Disease of the Nipple and Its Relation to Surface Cancers and Precancerous States in General By Keith Inglis, M D Quarto of 233 pages, illustrated New York, Oxford University Press, 1936

Favourite Prescriptions Edited by Sir Humphry Rolleston, M D & Alan A Moncrieff, M D Octavo of 227 pages London, Eyre & Spottiswoode, 1936 Cloth, 10/6

Diseases of Infancy and Childhood By Wilfrid Sheldon, M D Octavo of 738 pages, illustrated Philadelphia, P Blakiston's Son & Company, Inc., 1936 Cloth, \$7 00

Snow on Cholera. Being a Reprint of Two Papers by John Snow, M D Together with a Biographical Memoir by B W Richardson, M D & an Introduction by Wade Hampton Frost, M D Octavo of 191 pages New York, The Commonwealth Fund, 1936 Cloth, \$2 50

Live Long and Be Happy How to Prolong your Life and Enjoy it. By Lewellys F Barker, M D Duodecimo of 224 pages New York, D Appleton-Century Company, 1936 Cloth, \$2 00

The Intellectual Functions of the Frontal Lobes A Study Based upon Observation of a Man After Partial Bilateral Frontal Lobectomy By Richard M Brickner, M D Octavo of 354 pages, illustrated New York, The Macmillan Company, 1936 Cloth, \$3 50

Eugenical Sterilization. A Reorientation of the Problem By The Committee of the American Neurological Association for the Investigation of Eugenical Sterilization Octavo of 21 pages, illustrated New York, The Macmillan Company, 1936 Cloth, \$3 00

The Medical Clinics of North America. Volume 20, number 2, September, 1936 (St Louis Number) Octavo of 685 pages, illustrated Published every other month by the W B Saunders Company, Philadelphia Per Clinic Year (6 issues), Cloth, \$16 00, Paper, \$12 00

Bright's Disease and Arterial Hypertension. By Willard J Stone, M D Octavo of 352 pages, illustrated Philadelphia, W B Saunders Company, 1936 Cloth, \$5 00

ORDERING BOOKS

As a service exclusive to our readers, books published in this country may be ordered through the Business and Editorial Offices of the Journal (33 W 42nd St, N Y C) postage prepaid. Order must be accompanied by remittance covering published price.

REVIEWS

Johannes De Mirfeld of St Bartholomew's, Smithfield. His Life and Works By Sir Percival Horton-Smith Hartley, M D & Harold Richard Aldridge, M A. Octavo of 191 pages New York, The Macmillan Company, 1936 Cloth, \$4 50

This is a beautiful book of 191 pages, including appendices and index. It treats of the first medical writings, known to be associated with any English hospital, and is an exhaustive examination of the activities of one Johannes de Mirfeld, who lived in the days of Richard II and wrote within the Priory of St. Bartholomew in Smithfield.

The work is divided into three parts, as follows

I Introduction, 1 The life of Johannes de Mirfeld, 2 Johannes de Mirfeld as a Medical Writer

II The Breviarium Bartholomei, described by the authors as, in form, a "great medical compilation—upon which rests his claim to be a physician" To it is added much superstitious and magical lore—incantations and charms. There are eight chapters in Latin, with an English translation on the opposite page and two photostats of the original manuscript.

III The Florarium Bartholomei, a theological treatise of 175 chapters, one of which is entitled "Physicians and Their Medi-

cines." This latter chapter is reproduced in the book, in Latin and English, with two photostats, one being Mirfield's will. The manuscript is beautifully written in fourteenth century Latin and is redolent of medieval atmosphere. It is a fine piece of "laboratory" work, well worth a place on the shelf of one interested in medical history.

J M VAN COTT

Sensation Its Mechanisms and Disturbances an Investigation of the Most Recent Advances Association for Research in Nervous and Mental Disease, volume XV of a Series of Research Publications Octavo of 541 pages, illustrated Baltimore, The Williams & Wilkins Company, 1935 Cloth, \$7.50

This volume is the fifteenth contribution of The Association for Research in Nervous and Mental Disease.

It is made up of four sections and chapter subheadings, the work of 33 investigators, each dealing with a distinct phase of the problem. Section I deals with Peripheral Nerves and Sensory Nerve Endings, Section II with Visceral Sensations, III with Sensory tracts and Mechanisms in the cord and Brain, IV with Clinical Cases.

It is enriched by 153 illustrations and 31 tables. Unusually lengthy lists of references are appended to each Chapter.

This book adds to the growing reputation of these annual publications, fast becoming an indispensable part of a neurologist's library. It is virtually impossible in a brief review to cover such a volume adequately. The complete historical surveys of each phase of the problem and the additional new data make it a worth while acquisition.

H R MERWARTH

A Practical Manual of Diseases of the Chest. By Maurice Davidson, M.D. Octavo of 528 pages, illustrated New York, Oxford University Press, 1935 Cloth, \$14.00

Dr Maurice Davidson presents to the medical profession a valuable book on the Diseases of the Chest. Intended primarily for the specialist in this field, the general practitioner, too, will be well repaid for its study. Changes that have taken place in recent years in descriptions of these diseases, in studies of their pathology, diagnostic refinements afforded by laboratories, bacteriological and X-ray, the interpretation of X-ray plates, increased knowledge of treatment and definite indications therefor are well given. The indications for thoracic surgery and the results to be expected therefrom are clearly drawn. The reader is quickly shown that thoracic surgery means more than thoraco plastes for tuberculous patients. The treatment of empyemata and

all intrathoracic suppurative processes are approached from conservative, safe and valuable viewpoints. Medical treatment is not minimized. One must praise the illustrations in this book. There are 199 of them. They are well made, very informative and appropriate to the particular subject shown. The X-ray illustrations of the normal chest should be of much assistance to the general practitioner.

There is no hesitation in commending this book and appreciating its usefulness.

THOMAS A MCGOLDRICK

Recent Advances in Dermatology By W Noel Goldsmith, M.D. Octavo of 522 pages, illustrated Philadelphia, P Blakiston's Son & Co., Inc., 1936 Cloth, \$5.00

This book of 500 pages is one of a series of "Recent Advances" in various branches of medicine. Unlike our Year Book, however, it takes in the accumulated advances in dermatology over a period of approximately 20 years, and its style is not that of a review of published paper after published paper, but, rather, all the research work and clinical experience of many writers has been welded into one whole with the experience of the author.

In the early chapters one finds rather detailed and pertinent descriptions of the minute vessels of the skin, and their response to stimuli of various types eg stroking, ultra-violet light, temperature changes, etc. One is shown how the nerve supply of the blood vessels alters their response, and the effect of injections of histamine, etc.

Under "Pigment" we find the melano-blasts, and various pigmented nevi, as well as a discussion of leucoderma and sundry forms of hyperpigmentation. The endocrine, nervous, and mental influences on skin diseases are presented as well as the relationship to the reticulo-endothelial system.

Disorders of metabolism and allergy come next, with, we believe, unbiased expression of opinion as to their definite position in the role of cutaneous disturbers.

A classification, and discussion, of cutaneous tuberculosis, and cancer, are to be found, and the effects of the various forms of radiant energy.

One picks this book up with an idea of skimming through it, and finds the necessity of reading thoroughly, attentively. As the author remarks in his foreword "If someone is to profit from reading it, he will stand most chance, I think, by ploughing bravely through the chapters in their proper order (and then, perhaps, doing it again)."

The reviewer has had his first reading and shall look forward to the second one.

E ALMOUR GAUVAIN

A Synopsis of Physiology By A Rendle Short, M D and C I Ham, M B Second edition edited by C L G Pratt, M D Duodecimo of 312 pages, illustrated Baltimore, William Wood & Company, 1936 Cloth, \$3 50

The text of this little volume is made up in general of systematized statement of matter-of-fact findings and widely accepted explanations of animal—predominantly human—physiologic phenomena and processes, being intended as a handy, reliable mnemonic aid for students of the subject in general, for practising physicians and surgeons in particular and for any others who, though possessed of the required basal knowledge, have failed to keep abreast of recent advancement in the subject. As such it is frankly recommended and its authors congratulated

JOHN C CARDWELL

A Textbook of Surgery by American Authors Edited by Frederick Christopher, M D Octavo of 1608 pages, illustrated Philadelphia, W B Saunders Company, 1936 Cloth, \$10 00

This text comprises 1600 pages of a compendium by American authors on the major problems of surgery. The medical profession has had many similar texts presented in the past. The majority of them have been too cumbersome and voluminous to lend themselves to easy usage. This volume has overcome these objections. The author has restricted his contributors and the entire subject matter is included in a single volume. While such a compendium will require frequent editions in order that the subject matter may be constantly up-to-date, nevertheless, the present volume is one of the most splendid and modern descriptions of surgical problems for the student and practitioner.

184 contributors have apparently one object in mind—to present their subject as a teacher of their specialty. We believe that this has added greatly to the value of their efforts. Although etiology, symptoms and diagnosis have been stressed throughout, operative procedures have not been neglected. Happily, however, these operative procedures have been described in such a manner that the reader is impressed by what should be done in treatment rather than how it should be done. The technical details have not been entered into except in an outline manner.

The illustrations are adequately abundant and serve their purpose admirably.

In general, this book should be welcomed by the profession as one of the outstanding surgical texts of a generation.

ROBERT F BARBER

Clinical Heart Disease. By Samuel A Levine, M D Octavo of 445 pages, illustrated Philadelphia, W B Saunders Company, 1936 Cloth, \$5 50

In the preface the author states that the book is not an attempt to cover in detail the entire field of cardiovascular disease, but to present in simple form the important aspects of diagnosis, prognosis and treatment of heart disease. He has succeeded admirably in this purpose. The book is full of valuable information and contains much that is not included in the ordinary text book. It represents mainly the author's own experience in this field. It is extremely practical and stresses the great value of clinical observation. Many stimulating thoughts are presented regarding phases of the subject which are at present obscure. The book can be highly recommended to the general practitioner, for whom it is written, but should also be greatly enjoyed by those primarily interested in cardiovascular disease. It is well printed and the illustrations are excellent.

J HAMILTON CRAWFORD

Emergency Surgery By Hamilton Bailey, F.R.C.S. Second edition Octavo of 842 pages, illustrated Baltimore, William Wood and Company, 1936 Cloth, \$14 00

The second edition of this work is now in one volume of 842 pages. There are 812 illustrations, many in color, and most of them necessary and descriptive. The author explains in his preface to the second edition, "When to operate, when not to operate, and how to operate under emergency conditions is the theme." While it may be contended that he has allowed himself some latitude in the interpretation of what constitutes a real surgical emergency, he does handle the undoubted emergency cases with discrimination and judgment. The subjects are divided into 52 chapters, on a grossly anatomical basis, with a short and pertinent bibliography at the end of important chapters.

In some respects, a similar book by Felix Lejars, "Urgent Surgery," has a more logical and didactic approach in the discussion of the indications for the kind and character of the surgery to be done—the "What shall I do next" method of meeting the emergency. But Dr Bailey has taken his cases from actual reports and personal experiences, and offers a clear and definite procedure for the condition under consideration. What makes the book so worthwhile is the ease with which it can be read and the feeling of satisfaction at the amount of information so readily and pleasantly acquired.

J RAPHAEL

Allergy of the Nose and Paranasal Sinuses
A Monograph on the Subject of Allergy as Related to Otolaryngology By French K. Hansel, M D Quarto of 820 pages, illustrated St. Louis, The C V Mosby Company, 1936 Cloth, \$10 00

This is a most comprehensive monograph. It covers the subject thoroughly and is replete with references for the student. The author not only treats of all the features of allergy as related to the field of otolaryngology and reviews the subject completely but he also points out the frequent association of the nasal with other manifestations, particularly asthma, gastrointestinal allergy, allergic skin diseases, and allergic headache. To bring home the principles of diagnosis and treatment, liberal use is made of case reports. Where there is interlinking with other specialties, such as pediatrics, ophthalmology, and general allergy, the various phases are clearly discussed.

Because of the importance that allergy is assuming in modern medicine, this book should be of value to every general practitioner and specialist. THOMAS B WOOD

A Manual of the Common Contagious Diseases By Philip M Stimson, M D Second edition Duodecimo of 437 pages, illustrated Philadelphia, Lea & Febiger, 1936 Cloth, \$4 00

In this second edition, Dr Stimson has given us a book excellently practical. The text runs smoothly neither interrupted by quotations from supernumerary authorities nor drawn to the tiresome length of all probable complications. In fact the book is pleasant to read.

While not exhaustive enough to satisfy the advanced students, the nurse, student of public health, the medical student and the busy practitioner will welcome its adequacy, brevity and clarity.

The chapters on medical aseptic technic, the management of contagious diseases in the school and the home as well as the schematic summary of useful information at the end, increase the book's value. The glossary will be a boon to the nurse.

K G JENNING

The Balanced Diet. By Logan Clendening, M D Duodecimo of 207 pages, illustrated New York, D Appleton-Century Company, 1936 Cloth, \$1 50

A large number of popular books on diet have been published within the last few years, some good and others not so good. This little book by Dr Clendening is undoubtedly the best thing on the subject for the layman that the reviewer has had an opportunity to read. It is most entertaining and enlightening. The author's imitable style and accurate presentation of accepted concepts of metabolism and nutrition

makes this book an ideal one for the physician to recommend to his patients. The author discusses the physiology of metabolism and its practical application to the study of nutrition. The second part of the book is devoted to the problems of infant feeding and diet in disease. There is an excellent chapter on food fads in which Dr Clendening exposes the various misconceptions and pseudo-scientific basis for such fads as naturopathy, fasting, Hay diets and vegetarianism. WILLIAM S COLLENS

Collected Papers of the Mayo Clinic and the Mayo Foundation. Edited by Richard M Hewitt, M D, Lloyd G Potter and A B Nevling, M D Volume 27, 1935 Octavo of 1353 pages, illustrated Philadelphia, W B Saunders Company, 1936, Cloth, \$12 00

In this year's volume of assembled papers there is maintained the usual high standard of previous volumes.

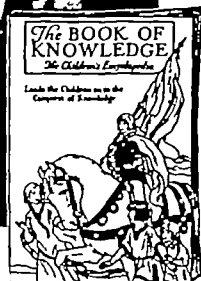
The material is well arranged, and the papers cover fairly well the field of clinical surgery with an occasional article devoted to laboratory investigations in related fields. More than half of the articles are by abridgment which does not impair their value for quick reference. Over 450 articles, appearing by title only, are so listed as to furnish a very useful guide to the general medical and surgical literature.

EDWARD P DUNN

My Life and Work. The Search for a Missing Glove By Dr Adolf Lorenz. Octavo of 362 pages, illustrated New York, Charles Scribner's Sons, 1936 Cloth, \$3 50

This book of 362 pages is written in popular style by a genius who has also a very human personality. His early life is interestingly recorded. He made rapid progress in the field of surgery, and soon became a Court figure. His description of the Viennese Court life and the rigid ceremony of the old Emperor, Franz Joseph, is true to form and pleasing. So also is his experience in America. The book is replete with humorous sketches and direct criticisms of men and things. But back of it all is the record of a strong character, a direct shooter, abounding in energy and determination. In all of the years of arduous labor in a difficult field, Dr Lorenz finds time for relaxation, music and art, and the pleasures of good society. One cannot read the book without being stimulated by its record of over half a century of vigorous work in a field of surgery, very much the making of the author himself. Nor can one escape the realization, that, aside from a large and lucrative practice, Dr Lorenz did an enormous amount of charity work on patients from all parts of the globe.

J M VAN COTT



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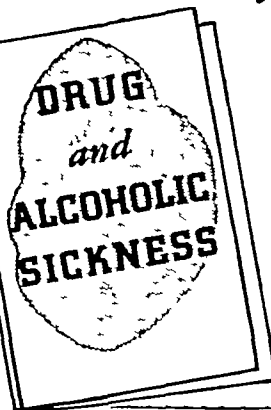
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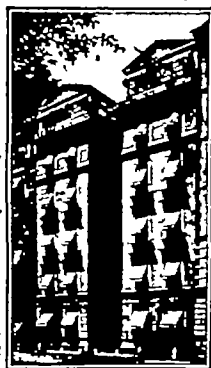
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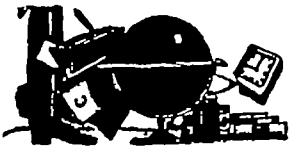
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Travel and Resorts

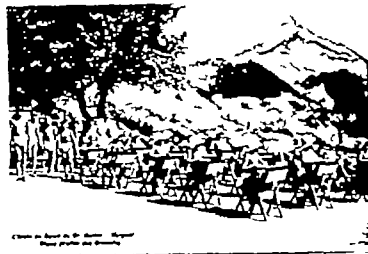
A Sunday in Leysin—the Front Lines of Tuberculosis Warfare

As Lausanne is on the shore of the lake of Geneva, we cannot expect the sky to be always clear in Winter, but, if we wish the sunshine, we have only to take the electric train and in less than two hours we are sure to have our desire gratified

We not only wished to seek sunshine, but to visit Leysin, the celebrated climatic station where the marvelous work of Dr Rollier is being carried on. We took the early Geneva-Simplon train. Hundreds of people, young and middle-aged, who love the fresh mountain air and the vigor which it brings, boarded the train, most of them with skis. Gay colors added interest to the lively scene. There was no rushing, no pushing—order was observed everywhere.

As we approached Montreux about eight o'clock, one after another the mountain tips of Gramont, Cornettes de Bise and the seven peaks of the Dent du Midi were lighted up and by the time we reached Teritet, deep shadows were cast down the deep mountain sides and the mist became rose-tinted. The windows in a little hamlet hung on the mountain side glistened like electric lights.

*Special
to
THE JOURNAL
by
Mary
Vanderbilt*



Above A patient enjoys the beauty, fresh air and restfulness of Leysin, Switzerland. And the famous sun school of Dr. Rollier's near Leysin.

Below Patients occupy their time profitably at the International Factory Clinic—and at Dr. Rollier's find pleasant diversions.

At Aigle we changed for the electric cob railway which connects the plain and the mountain-tops, and winding through the woods and crossing the deep ravine, we soon reached Leysin. This village, backed against the south-eastern slope of the mountains, is protected against the north wind, and possesses all the advantages of a high altitude of 4150 feet a/s, pure, dry air and lengthy winter sunshine. Before the value of a dry climate and a high altitude had been scientifically ascertained, and when Leysin was connected with the plain by a single footpath, patients were sent here and housed by the peasants. Owing to the wonderful benefits derived by these patients under treatment for tuberculosis, Dr. Rollier, in 1903, opened his first nursing home for the systematic treatment of surgical tuberculosis by means of solar rays. The results which were obtained caused such a large number of patients to seek aid that today there are thirty-two sanatoria capable of caring for three thousand patients. These sanatoria possess every possible modern installation necessary to treat those invalids who seek a remedy for their ills. On



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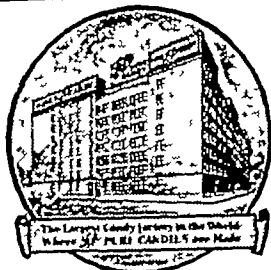
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did M Emile Meyerson and M Georges Duhamel The latter wrote to Dr Vautier "Your work to save the youth is still in its infancy, and we are not able to measure its importance, but the day will come, perhaps, when you will have saved a Beethoven, a Descartes, a Shakespeare! That day, will the entire world know how to express its gratitude?"

Each student is permitted to carry on his work according to the system prescribed by his own university, with no limitations except those imposed by his conditions The patient spends a certain number of hours in bed or on a couch comfortably placed in the sunshine or well-sheltered balconies facing south where he is able to continue his university work. Each student who is confined to his bed is provided with a radio so that he may be in touch, not only with the outside world, but with proceedings in the lecture-room downstairs Other scientific equipment, laboratories, slide and film projectors, etc, are of the finest.

A large library and 160 magazines in different languages are at his disposal If one is interested in international work, it would be a gratifying sight to see these representatives of different nations working under the same roof as though they were one great family Their faces browned by the sun were beaming with happiness, showing that they had forgotten their illness in the great joy of going forward with their life-work Dr Vautier welcomes teachers from foreign universities if there is a vacant place for them

Dr Vautier's wife showed me their own little son, about two and a half years old, without a particle of clothing, playing with his toys in the sunshine on the balcony where he passes most of his young life. Nothing could be of more benefit to a child, starting life in perfect health, than to have the continual influence of the sun to assure his later physical well-being

On our way back, we passed Dr Rollier's stately new Factory Clinic, where men and women are afforded an opportunity to work at their respective trades, or learn a trade, and thus earn their daily bread while being cured

After dinner, we were served coffee on the balcony overlooking the mountains and the valley The sun was so warm that Dr Piguet opened a parasol to shield my head. Great flocks of choucass, graceful black birds smaller than crows, circled over the village below, adding a lively touch to the snow

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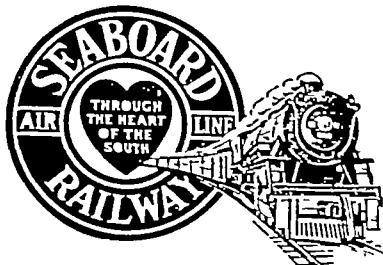
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the upper ridge of the mountain side is the Grand Hotel, its back against the great spruce forest and its face toward the sun and the Alps. Every comfort surrounds those who need to spend months here.

A winding road leads to the Mont Blanc Sanatorium, to which I was granted the favor of a visit by having a Swiss friend whose son, Dr. Charles A. Piguet, is the director. This sanatorium possesses every means for hastening the recovery of its patients. Radiography is applied on a large scale and by means of films, taken in series, the marvelous results obtained by treatment at a high altitude is observed and then further recorded in plastic form. Of the eighty patients spending the winter in the Mont Blanc Sanatorium under the skillful supervision of Dr. Piguet, about one fourth came to the dining room to enjoy the pleasure of a home table.

Dr. Rollier's Heliotherapeutic Establishments are famed for the treatment of all forms of tuberculosis of the bone, the joints, the glands, etc. The combined air and sun baths are known to be the most effective restorative. In 1910, Dr. Rollier opened the "Sun Preventorium," a school in the sun for delicate, predisposed children. "Les Noisetiers" is on the height at Cergnat near Leysin.

The home in which I was deeply interested was the Sanatorium Universitaire, the realization of a dream, the work of profound love on the part of the director, Dr. Louis Vautier. He conceived the idea of establishing a home for students when he realized the tragic sadness that envelops the mind of a student when, just as he is beginning his work upon which his future career depends, he finds that he has some form of tuberculosis.

Dr. Vautier consecrated all his forces, all his enthusiasm and his great love for youth to this noble work. Every Swiss university answered his appeal for support, every professor and student contributed a share, and today this noble work is a reality and carried on to a truly remarkable and encouraging degree of success. The sanatorium accommodates at present fifty students. There have been students from twenty nations who have come here for treatment and received the instruction given by professors who come from different universities.

These professors make regular visits and thus keep in close touch with the work. They often come for treatment themselves and thus have a prolonged stay there. Several professors have even come from France because of their deep interest in the work as

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scene before us At our right, the charming Val d'Illiez with the Dent du Midi towering over it. A glimpse of the massive summit of Mont Blanc, the Dent de Morcles the Grand Mouveran, the Profile de Victoria, the Chamosaire, the Oldenhorn and the massive Diablerets, all covered with snow, the skiers across the valley shooting down the slide, leaping the ten-foot jump, the patients resting in the sunshine, the tranquility of the mountain peaks over all!

On our homeward journey, the sun lighted up the Dent de Morcles while the seven peaks of the Dent du Midi were enveloped in a cloud so thin that they were outlined against a blue sky and beneath them a sea of mist which, as we approached the valley, became rose-tinted and concealed the mountains

We were grateful for the sunshine and light which we left on the mountain-tops and also for that international understanding and friendliness that is rapidly taking possession of the hearts and minds of men.

Improvements at the "Laurel-in-the-Pines"

The Laurel-in-the Pines, in Lakewood, N. J., will open its 1936-37 season on Wednesday, November 25th, under the continued management of Frank Seiden. Outstanding among its many improvements for the new season is the \$20,000 expenditure for re-modeling the ballroom, to be called the Mirror Room.

In conjunction with the Mirror Room, the management has devised an entertainment program that includes a fine orchestra playing nightly and broadcasting over a coast-to-coast network and a special week-end floor show that will feature outstanding personalities of the stage, screen and radio.

For its initial program the Mirror Room will feature Joe Haymes and his Columbia Broadcasting orchestra, together with Barry



A luxurious berth for comfortable night travel on one of the new American Airlines Flagships

McKinley baritone and the gala holiday show will be headed by Belle Baker.

A diversified program of sports activities has been planned which includes fall golfing on the Laurel-in-the-Pines golf course and riding club, with a special bridle path for jumping, a shooting range and a dancing class for those interested in learning the latest novelty dance steps.

Negotiations are being made with the New Jersey Central Railroad for a special train to be added to the regular week-end trains to Lakewood for the exclusive use of the Laurel-in-the-Pines' guests.

* * *

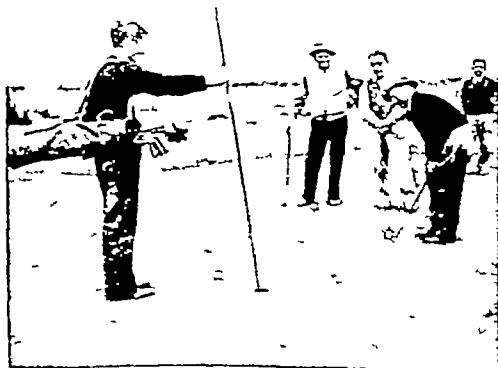
Prepared for Busiest Winter in Air History

American Airlines Inc. developed the sleeper plane more than two years ago, and is the only domestic air line to offer such service. The early planes were twelve passenger "Condors" and they were used on the overnight services between Cleveland and Fort Worth, and Fort Worth and Los Angeles. They have been retired, however, and now the magnificent new fourteen-berth "Flagships" fly the Southern Transcontinental Route between New York and Los Angeles making only three stops between the coasts. The berths are luxurious six feet five inches long, and equipped with reading lights, ventilators, clothing hangers, etc.

Reversing the usual policies of the air transportation industry in facing winter operation, American Airlines Inc., is completing preparations for the busiest winter season in its history, A. J. Gariepy, district sales manager of the company, announced today.

Instead of curtailing schedules in anticipation of lessened traffic, American is adding

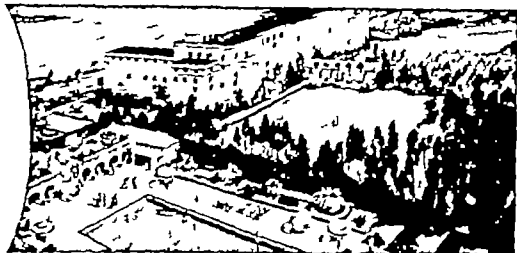
Golfing is one of the many attractions at Lakewood's "Laurel in the Pines."



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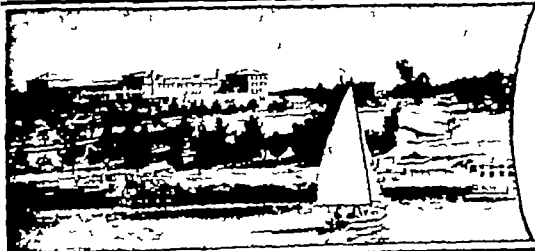
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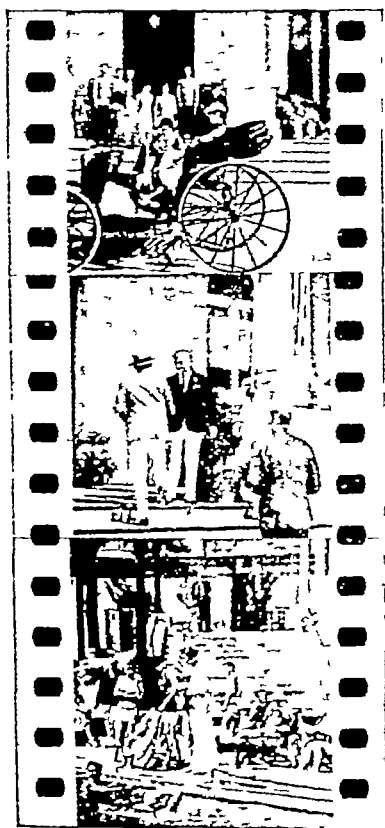
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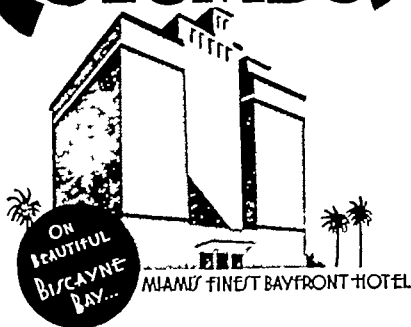
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schedules to its major routes throughout the United States and making available a greater number of passenger seats than ever before.

In New York alone, he pointed out, American Airlines today has in operation 35 3% more schedules than a year ago while the inauguration of overnight 14-passenger Flagship Sleeping Plane service to Los Angeles, and the installation of 21-passenger Flagships on the Buffalo-Detroit-Chicago route as well as on the New York-Boston division have made available 67 4% more seats than on November 1, 1935.

"Improved flight equipment and more modern aids to aerial navigation will enable American to maintain a higher degree of operating efficiency this winter than ever before," Gariepy said. "Realizing this fact, we have made preparations to accommodate an increasing flow of passenger traffic right through to spring."

Gariepy pointed out that the addition of co-pilots to planes in local service between New York and Cleveland via Albany, Syracuse, Rochester and Buffalo and also to Chicago via Washington, Elkins, (W Va.) Charleston, Cincinnati and Indianapolis will permit a greatly improved operation between these intermediate cities, complementing the high speed transports on the through service.

LAUREL in the PINES

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dancing and other social affairs. This hall has a seating capacity of approximately 5,000 and includes among its equipment a stage and committee rooms. A large arched loggia, 12 feet wide, overlooking the ocean, fronts this hall.

On the ground level are two splendidly equipped bath houses, 60 by 150 feet in area, each as large as the average dwelling house. Branch lines of the Pennsylvania-Reading Seashore Lines run direct to the Convention Hall on either side making it possible, should the need present itself, to discharge passengers almost on the beach itself.

One of the unique features of the main auditorium is a floor space of 90 by 200 feet, which can be converted into an ice skating rink in a comparatively short time. Hockey has been one of the outstanding sports at the Convention Hall during the past six seasons and two years the Atlantic City Sea Gulls won the national amateur hockey title. The ice in the rink can be melted in a few hours and the floor restored to its former condition.

Some idea of the immensity of the main auditorium may be gained from the fact that a 13-story building, 500 feet in length and 200 feet wide, might be erected within its walls, leaving a space of 100 feet on all four sides. The main auditorium is large enough to permit the playing of baseball and football games. Every fall turf is laid out and football played regularly at night on a regulation gridiron with special illumination that gives the entire place a daylight appearance. Seats for 12,000 are provided for football games and 41,000 for the major prize fights.

Within the main auditorium also has been constructed and fully equipped the largest stage in the world. It is 110 feet in width, 85 feet in depth and measures 165 feet between the wings. Located on the Pacific avenue side of the great structure, it has all modern properties, full electrical equipment and dressing room facilities, and on it may be shown to the best advantage the most spectacular of productions. It is on the huge stage that the professional basketball games and wrestling bouts are held during the season. For these events there is a seating capacity of 3,000.

The largest pipe organ in the world both in size and power, is housed in the main auditorium. Perfect acoustics comprise another outstanding feature of the main auditorium. Despite the Auditorium's immense proportions, the organ pipes have been so arranged at both sides of the stage and along the high, vaulted ceiling that the entire auditorium can be



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Dr. H. V. Hicks of North Carolina receiving the Bermuda Trade Development Board cup from Dr. Harry Gradle, President-Elect of the American Academy of Ophthalmology and Otolaryngology. The presentation was made at the Castle Harbour Hotel in Bermuda during the Post Convention Cruise of the Academy.

His announcement follows closely upon American's establishment of a new all-time passenger record for the first nine months of 1936, with a total of 175,549 passengers as compared with 133,495 passengers for the first three-quarters of 1935.

* * *

"Duchess" Liners to Make Christmas Sailings to Europe

Christmas sailings from Canada, which means the last liners leaving Saint John, N. B., and Halifax in time to reach British ports before Christmas day, are always among the heaviest booked of the year. This time, as usual, it is necessary for the lines to schedule extra ships.

Actual "Christmas departures" this year for the Duchess of Richmond will be Dec. 11 from Saint John and Dec. 12 from Halifax, to Southampton and Havre. The Duchess of York, for Glasgow, Belfast and Liverpool, sails a day later from each port.

For those planning longer Christmas stays in the old country, the Montcalm sails from the two maritime ports Dec. 4 and 5 respectively.

In addition to the Christmas sailings from Saint John and Halifax, the last sailings from Montreal are always regarded as similar departures. In many cases the passenger lists on these occasions are also very large. Many of the passengers are from the western farmlands, homeward bound for a winter's visit.

Some, bound for the Continent, leave early to take in the Christmas Fair at Nuremberg, which starts Dec. 4 and lasts three weeks, the celebration of the Feast of the Immaculate Conception at the Notre Dame Church at Lyons on Dec. 8, or the St. Lucia Festival at Stockholm, Dec. 13.

* * *

No Cuts in Rates For Coronation

From the "Crows Nest," published by the Cunard White Star line, we learn there is no foundation to the rumor that reduced steamship rates will be in effect during 1937 in connection with the Coronation of Edward VIII on May 12, 1937.

Reports to the effect that steamship lines will make their rates as low as \$60 or \$80 per round trip are afloat, however, and agents are urged to discount them as fabrications of a harmful and confusing nature.

As it is anticipated that ocean travel to Great Britain and the Continent will be exceptionally heavy during Coronation year, this in itself will be a powerful enough attraction to visitors without the extra inducement of reduced rates.

* * *

Atlantic City's Convention Hall

This resort is justly proud of its convention hall, largest building of its kind in the world, and one of Atlantic City's greatest drawing cards in its appeal for visitors.

Constructed at a cost of \$15,000,000, the convention hall was erected on a more lavish scale than ever before attempted in this or any other country. Few visitors to the resort fail to take advantage of a tour of the huge building before returning to their homes.

Located on the Boardwalk between Georgia and Mississippi avenues, the structure covers an area of seven acres. It is 350 feet wide by 650 feet deep, and provides a total seating capacity of nearly 75,000, the main auditorium alone seating 41,000. This city's permanent population of 65,000 could be provided with seating accommodations in the structure with room to spare.

The housing of the largest of the national conventions is only one of the many uses to which this building is devoted. Hundreds of other attractions find their way into this superstructure throughout the year.

The floor of the main auditorium is 168,000 square feet in area, while an additional space of 100,000 square feet is provided in the basement. Adjacent to the main auditorium and fronting the Boardwalk is the ballroom measuring 130 by 185 feet, which may be used for smaller conventions, art exhibits, banquets,

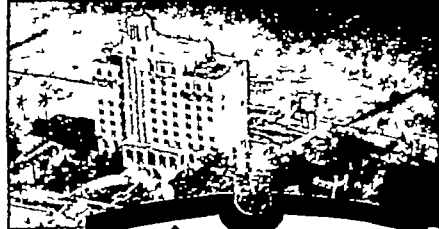
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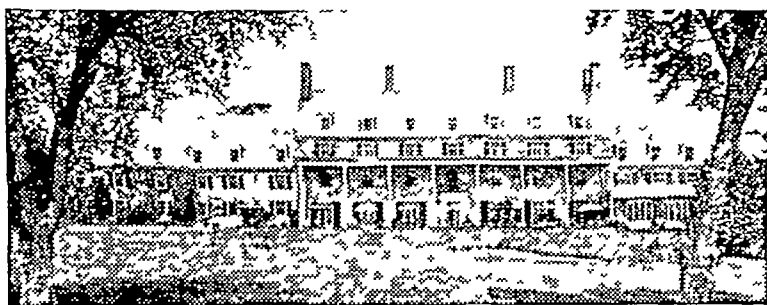
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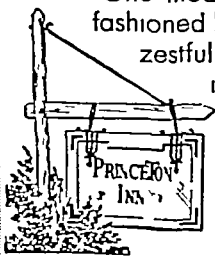


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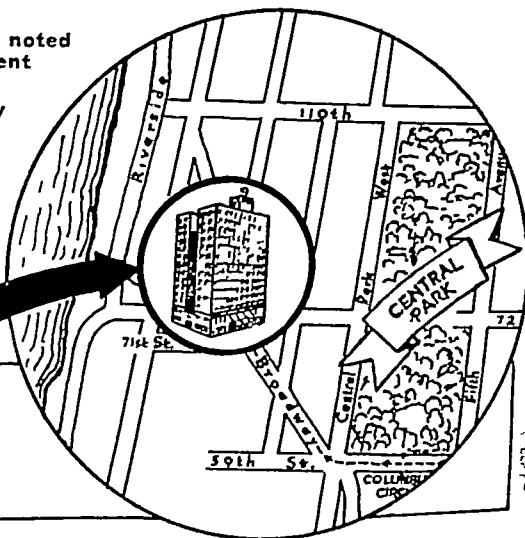
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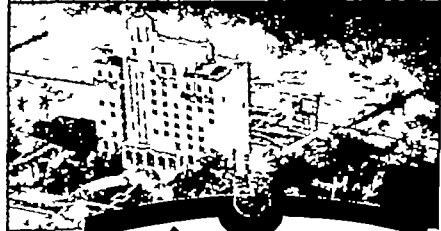
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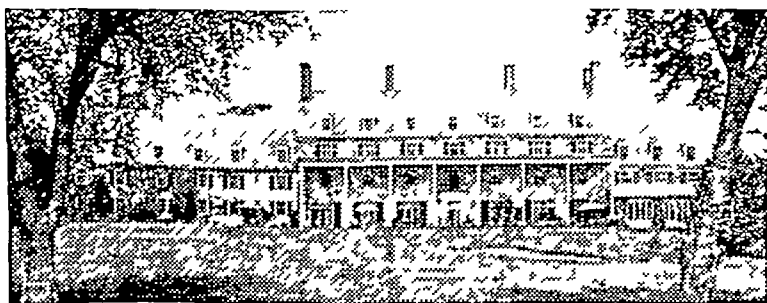
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dren's playroom, private
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entrance, 50 feet in width, to the interior of the Convention Hall. On the Pacific avenue side of the building there are additional stores, 21 in number.

Approximately 400 automobiles may be parked on the ground floor of this great structure. Terraced sidewalks have been provided on both Georgia avenue and Mississippi avenue in addition to the ramp inclines from the ground. By this means the huge crowds that on occasions fill the hall to capacity are handled with great expedition and dispatch.

Heat and ventilation are important items in a structure of this character, and experts in both these lines of endeavor found their work cut out for them when they set out to solve their respective problems. Air used for ventilation is again utilized to heat both the main auditorium and the smaller hall at the front of the structure. Direct radiation is used in the main entrance lobby, and entrances on the sides of the building, and is supplied by recirculating air warming units. The offices, stores, corridors, stairways, and other subdivisions of the building are heated by direct radiation.

For the maintenance of the required vacuum in the heating returns and for the disposal of air and condensation, six vacuum pumps are provided. The temperature throughout the entire structure is automatically controlled. Ventilation is provided by a battery of 31 motor driven fans, with a capacity of 1600 tons of air per hour. Also there have been installed 75 vent fans capable of discharging 2900 tons of air per hour. Seventy-two per cent of the air supplied to the building is for the main auditorium.

Because of the fact that the great national conventions and expositions which come here stage machinery and other exhibits, elevators capable of handling all kinds of heavy equipment have been installed. It was found necessary also to provide elevators for handling the chairs and scenery for the stage at the Pacific avenue end of the structure. Two large freight lifts of the vertical steel screw type, each having a capacity of 50,000 pounds, have been installed, in addition to a freight elevator of 4000 pounds capacity for trunks and light freight and a passenger elevator lifting 2000 pounds at the rate of 300 feet a minute.

Three Sterling water tube boilers of 1490 rated horsepower have been installed. This boiler plant provides steam for heating for hot water and for exhibition purposes. The oil used for fuel is stored in underground tanks of 40,000 capacity, so located that they may be filled from tank cars. Coal bunkers

have been provided, so that if the necessity arises a change may be made from oil to coal as fuel

The Convention Hall also houses the studios and offices of municipal radio station WPG, from which nearly fifty per cent of the nation's dance music broadcasts originate during the summer months

* * *

Travel Brevities

WELL KNOWN AMERICANS have taken big game trophies in the immediate vicinity of Metagama, Ont., this season, according to A. O. Seymour, General Tourist Agent of the Canadian Pacific Railway Ray Hayworth of the Detroit Tigers baseball team bagged a fine trophy Dr Harold C Rothschild of Meridian, N Y, secured a 59-inch moose head on the opening day, and George Burrell of Grafton, W Va, shot a moose 15 minutes out of camp Dr Rothschild's high opinion of the Metagama district was confirmed by the fact that he was able to shoot his moose on the opening day Partridge, bear, and deer, were also plentiful in this locality

A LONG LIST of doctors stopping at the Hotel Lexington in New York City included G G Lee, Edw Kovovitz, H. C Slocum, C E. Rowe, Henry Greenbert, J D Goldstem, Norbert Schickel, H Richman, Jas S Lyons, Wm F Nealon, L G Barton, P F Britt, R. B Hagen, Irving Kaskel, John C Younie, John C Currance, Geo Williams, C A Ashplant, and C Cavanaugh, all of N Y

AMONG DOCTORS registered at the Seaside Hotel in Atlantic City were Dr Michael Brick of New York, and Dr and Mrs R. E Fear of New Jersey

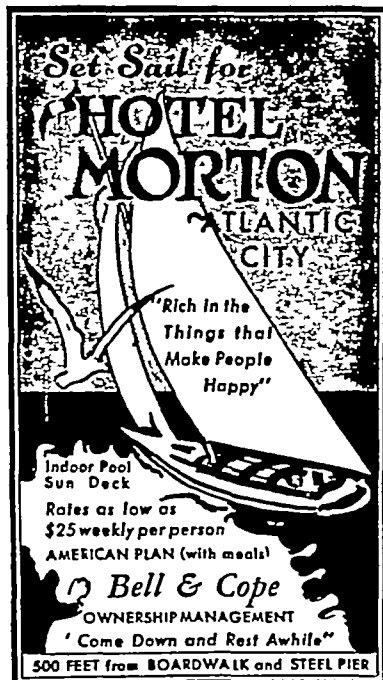
DOCTORS VACATIONING at the Senator in Atlantic City included Dr and Mrs L T Rizzi of New York, Dr Eva T Brodtkin of New Jersey, and Dr and Mrs I M Levitas of New Jersey

SAILING FOR BERMUDA, the *Queen of Bermuda* carried among the passengers, Dr and Mrs Louis M Burns, Dr and Mrs A S D'Angelo, and Dr and Mrs Harry S Arkin

INCLUDED among members of the Grace Line's 32-day cruise to Peru were Dr and Mrs R. Z Sanders

THE CLARIDGE HOTEL, Atlantic City, has been selected by several sections of medicine as official headquarters during the A.M.A. convention next June

Among recent guests at the Claridge, the following were included Dr and Mrs W J Walsh of New York, Dr and Mrs K. S Blanchard of New Jersey Dr and Mrs H E. Lynch of New York, and Dr and Mrs John R Irwin of New Jersey



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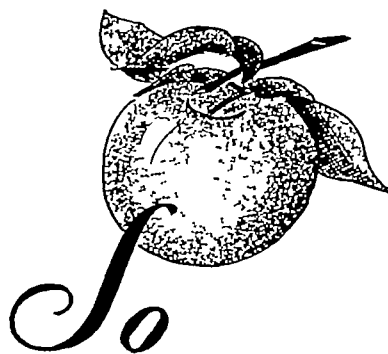
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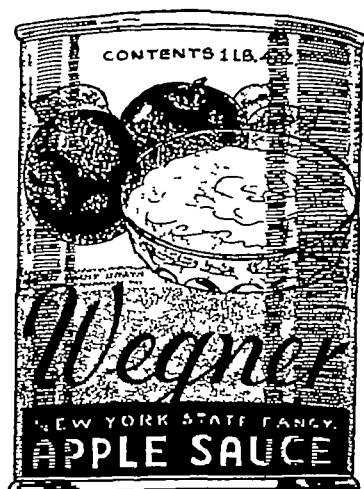
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VOL. 36—No 24

DECEMBER 15, 1936

PAGES 1927 to 2036

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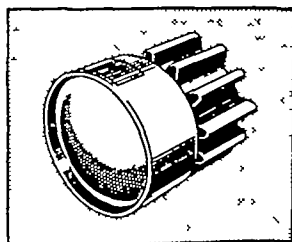
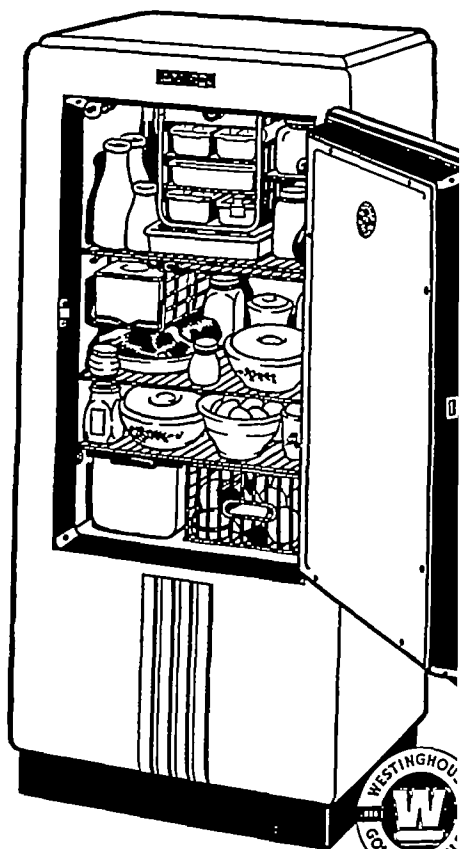


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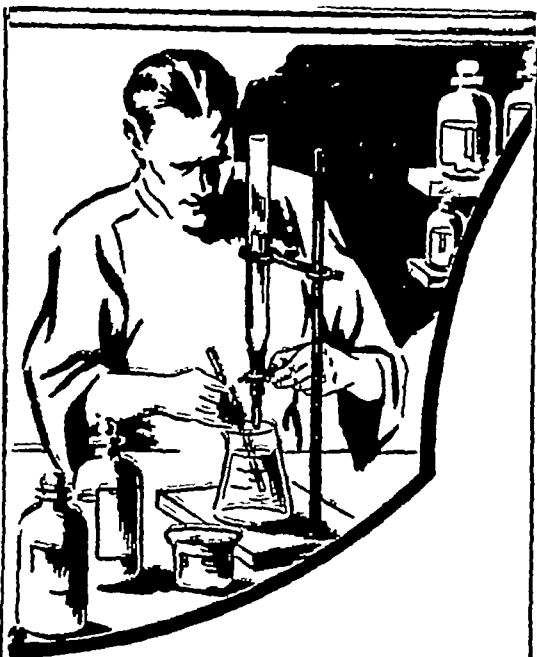
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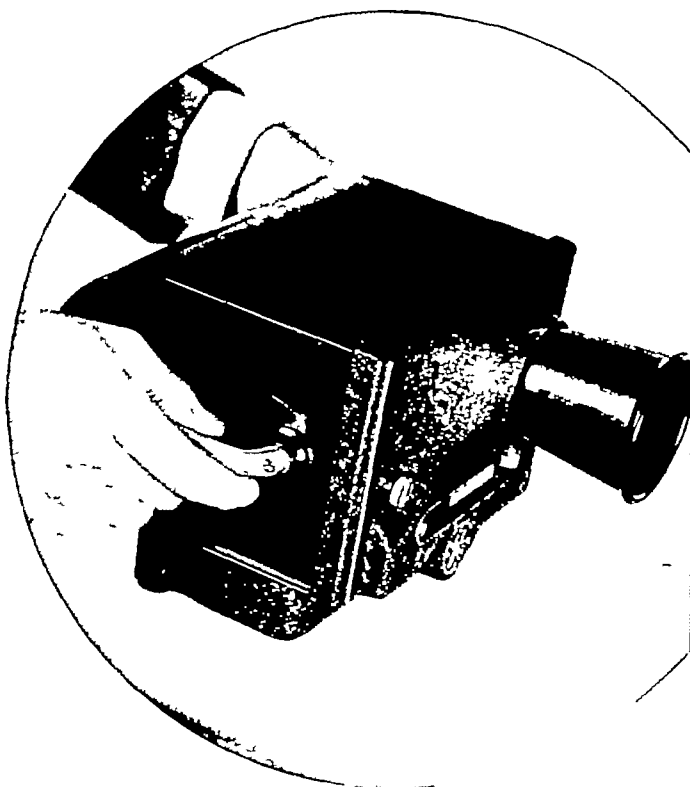
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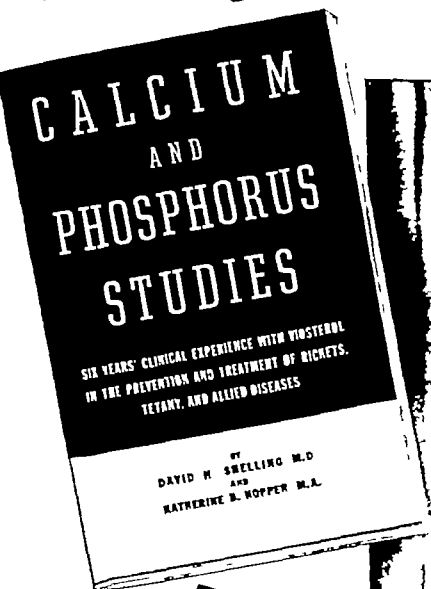
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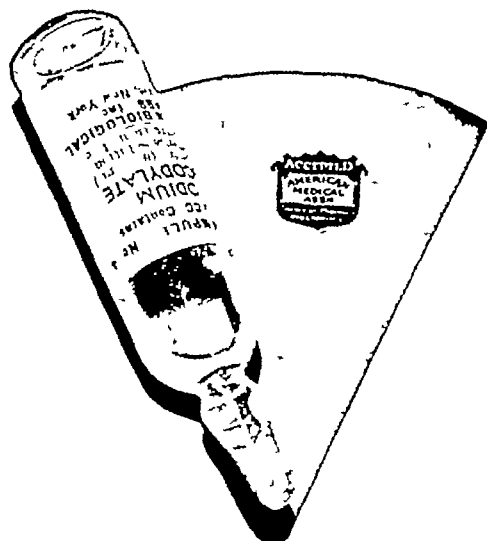
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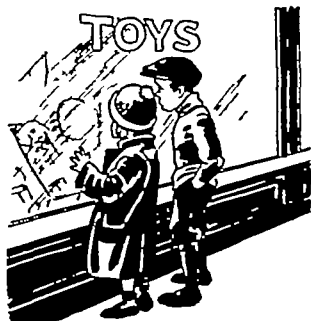
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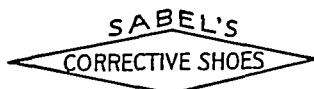
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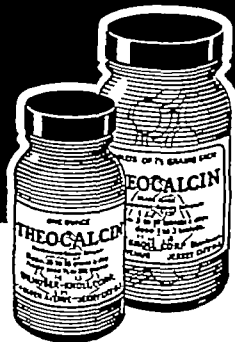
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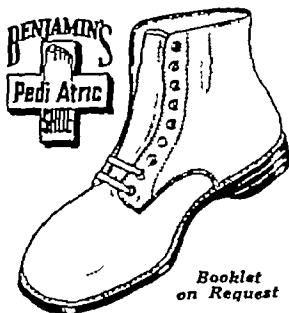
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Measles	2nd Week	Until 5 days from onset rash
Mumps	3rd Week	Duration of Swelling
Poliomyelitis	3-10 Days	21 Days
Rubella	3rd Week	Duration of catarrh and rash
Scarlet Fever	1st Week	After 21st Day— until cultures negative
Whooping Cough	2nd Week	Until 4 weeks from onset whoop

From
American Journal
of Public Health—
March, 1927

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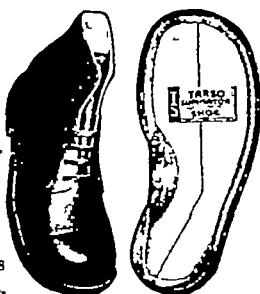
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drine action, exerted its depressor effect over a shorter period, temporarily nullifying the action of Benzedrine without being antagonistic to its continued prolonged action. Benzedrine has a definite stimulating action on the central nervous system as shown by the shortening of sodium amytal narcosis. A marked rise in both white and red blood cells, with a lowering of color index, was usually found. These increases were apparently mechanical and of no clinical significance. The authors state that they did not observe an increase in basal metabolic rate or blood sugar. Reference is made to the good effects of Benzedrine in lowered mood and in certain fatigue states, these are the subject of a separate study, as is the drug's action in relaxing gastrointestinal spasm.—*Adv*

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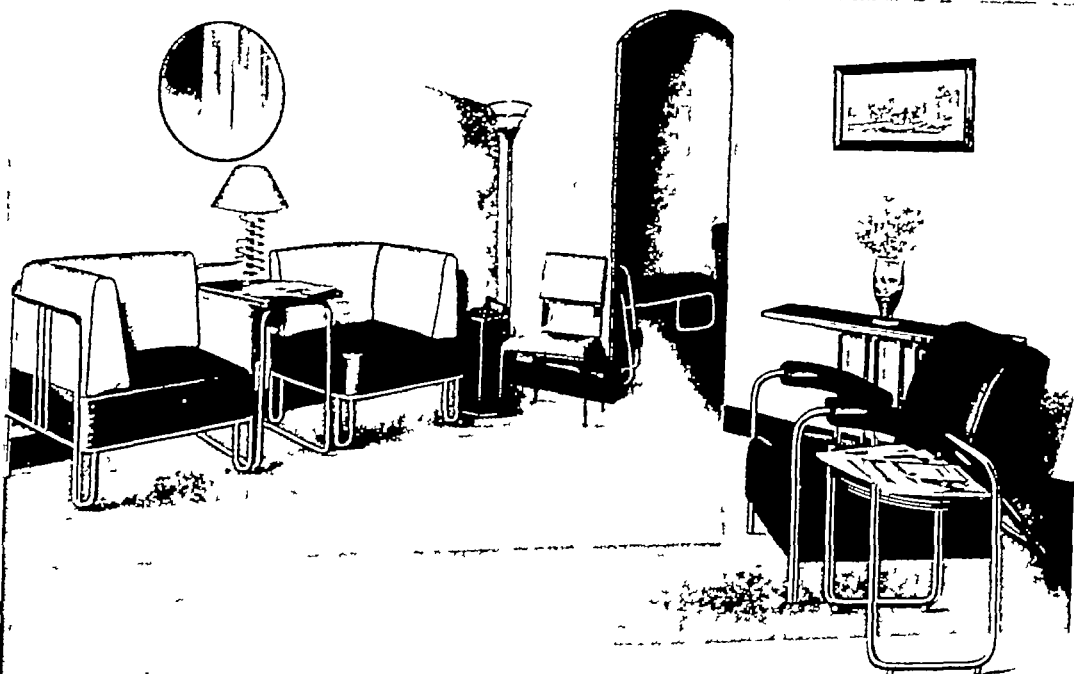
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Hospital Clean

BY BETTY LOU WILLIAMSON, R.N.

(It's worth two minutes to read it)



A few days ago, I had the pleasure, and I may say honor, of demonstrating the Nu Bidet to one of America's most outstanding urologists and gynecologists

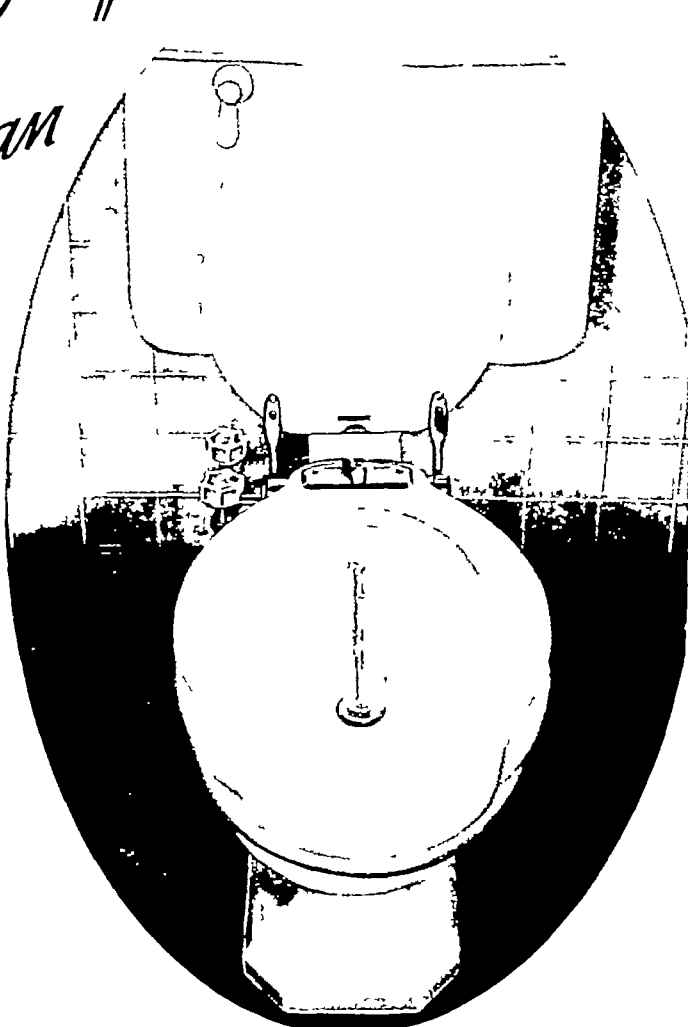
The odd thing that impressed me was that he said more in praise of the Nu Bidet than I had the opportunity of saying, and he told me, before I could tell him, that it should be in every American home and hospital. So that made it unanimous

He agreed with me that far too few people are completely clean—clean as I have been taught cleanliness—hospital clean.

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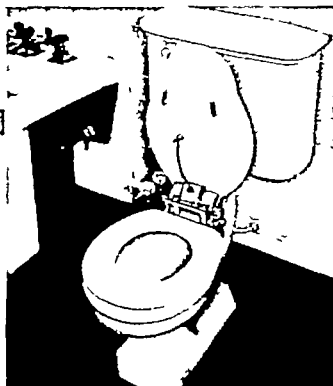
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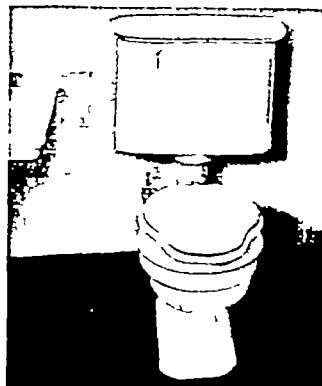
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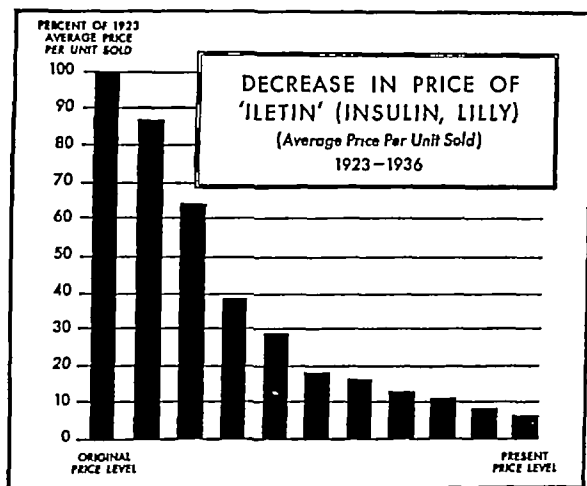


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FATIGUE AND NOISE IN INDUSTRYFOSTER KENNEDY, M D, *New York City*

Each age has its own genius and its own problems. While some of our headaches and sleepless nights will eventually push themselves into the past, we may be sure in things to come that new problems will come to tax man's wit. Just now we live in a period, Periclean *manqué* in a mad ingenious world full of poetry, murder, superstition, and mechanics. "This machine is to us" but we have emotions as well—maybe machines have too! It is emotion that makes a watershed between a fitting and smoothly running mechanical world and a more real world, complex in reactions and adjustments. Machines are made for man who should have the wit to control them for his own comfort and well-being. We deal here with industrialized man, on whom wear and tear increases with mounting inventiveness. Fatigue and noise in industry have been assigned to me for discussion—and thereby hangs for you and me a tale of trouble.

We cannot really here speak of fatigue from the point of view of workshop practice but from that of health. The former is the business of the industrial engineer and his army of experts with an eye for profits, the latter is the concern of the physician.

Objective fatigue comes when our muscles spend more than they repair—and how is this different from the quaint ways of the United States Treasury?

Subjective fatigue may be defined as the feelings of those who have to watch such antics, but Vernon, who seems a serious person, says that "if a worker suffers from excessive fatigue to the ex-

tent that his capacity to work is diminished, it follows sooner or later that he will experience subjective fatigue"¹ It's quicker to say that we can feel both muscular and mental fatigue.

Fatigue is in general influenced by circulation. Muscle fibers at rest secrete a reserve of glycogen ready to break down on stimulus² But too much importance has been attached to the accumulation of fatigue substances. We should stress a distinction between fatigue of excitation, or the consumption of substances that are necessary to life within the cell, and fatigue of depression or the accumulation of decomposition products, blocking function.³ Prolonged muscular exertion sets free carbon dioxide, lactic acid, acid potassium phosphate, and other by-products, which are dissolved in the blood stream. These decomposition products circulating in the system impair the functional activity of many tissues of the body.⁴ In extreme fatigue the glandular secretions are reduced by the accumulation of toxic products in the blood, and this stops digestion.

Fatigue in the nervous system is shown by a decreased excitability after previous excitation. The higher the center in the neural hierarchy the quicker it tires.⁵ Bronk,⁶ found that on the condition and activities of the sense organs in muscle depends the speed and efficiency of many organismal reflexes. This in animals Reid's study⁷ on man, using different weights, muscle contractions being marked by ergograph, demonstrated that afferent impulses from voluntary muscles are factors in producing fatigue in these

muscles regardless of whether the sensations are conscious or not

In a recent article, Cason, with experimental data, says fatigue is composed organically and is a failure to preserve an organic balance. He says

Fatigue is a local or general condition of impairment, and is the result of a variety of causes rather than the result of only one. Each of the different kinds of fatigue—such as conscious fatigue, unconscious fatigue, fatigue of the sense organs, fatigue of the nerves, fatigue of the muscles, chemical fatigue, neurasthenic fatigue, *et cetera*—has an organic nature

Commonly, several of the processes may be present simultaneously.⁸ Heavy muscular work reduces the capacity to perform other kinds of work, whether it be writing even a bad paper or playing billiards. Nevertheless a fatigued man may for a space perform work equal to a man rested—by adrenalization, acetylcholine or what we used, simply, to call will-power. Nevertheless there is loss of delicate coordination of movement associated with higher nerve centers, and there occurs much extravagant expenditure of muscular energy

The importance of rest pauses and changes in posture giving recovery from the effects of muscular exercise is indubitable. With the introduction of more frequent rests and changes of posture, and the holding of those positions demanding a minimum of mental, nervous, and muscular exertion, a larger amount of work may be done. In considering the pernicious results of poor posture, the Gilbreth International Committee advised the use of chairs constructed along anatomical lines and adjustable to individual workers.⁹

Methods of measuring fatigue in one industry are not always suitable for testing fatigue as it is experienced in another. There are certain indisputable evidences of fatigue, such as reduced production in the mid-morning and afternoon. In wartime, munition workers' output in Britain and America sagged at these times, and accelerated in both countries under sweet tea and ice-cream respectively. Tremor increases in spinners throughout the working day. If work continues over long, reaction time increases.¹⁰ By regulating his rate of output to the length of

his working period, the industrial worker may more or less unconsciously protect himself against fatigue. So, to shorten the working day usually produces improvement in the rate of output, but the variable factor is the honesty of persons and that varies with interest and self-interest. But the problem is not so simple that it can be solved just by shortening the working day, or like Mr. Ford, increasing the working wage. Among the chief factors causing fatigue we should include laborious work, piece work, speeding up, constant standing, irregular hours of sleep, eye strain, jarring processes, and loud noises which fatigue the ear and are conducive to deafness.¹¹ Overcrowding and bad air, particularly dryness and overheating, contribute to a feeling of tiredness and produce inefficiency.

"Fatigue," says Myers,² "is combated rather by the avoidance of too long uninterrupted spells of work, by the introduction of rest pauses, by change of work and posture, by determination of the best movements of the worker, by systematic training of the worker in these movements, by selection of the worker so that his occupation is adapted to his innate abilities, by the abolition of cause of needless resentment, irritation and worry, by the introduction of suitable incentives to work, and by the provision of good physical environment in regard to illumination, temperature, humidity, ventilation and food." And all these things together will perhaps be found in the New Jerusalem, Utopia, and the Never-Never Land of Dreams.

Closely related to the fitness of the work is monotony. Manifestly the primary cause of monotony in industry seems to be specialization of work and the minute division of labor. It may astonish you but it has been found by questionnaires that routine work is not necessarily monotonous. I asked many pitboys—miner's helpers—temporary soldiers—what they would do after the War—"go back to the pits," said they all. In our mundane mansions are many morons. Generally speaking, the more intelligent the worker, the more irksome becomes routine work. The maintenance of the required attitude becomes difficult because of his demands for more varied occupation. The results of a survey by Hop-

pock¹² suggest that the proportion of dissatisfied workers is probably less than a third. The presence of monotony is to be regarded subjectively, not objectively. Munsterberg¹³ became more and more convinced that the feeling of monotony depends much less upon the particular kind of work than upon the special disposition of the individual, and this despite the Demagogue's slogan that all men are created equal. Work production varies directly with zest. The nature of the work decides whether zest comes from the worker's intellect or his lack of intellect, workers of both kinds are needed for the world's work, but not for the world's government.¹

Of course the emotional tone greatly determines the development or absence of fatigue. This one saw well under War strain. During the ten day retreat of the British Fifth Army from the 21st of March 1918, the hospitals were filled with men so fatigued they could hardly stand. There were men who slept so sound that one could lift them up and drop them on the ground without awakening them. As the result of a victorious battle on the 8th of August of the same year, the British troops moved forward in attack to success, which ended on the 11th of November. During this period of no respite, full of zeal and impetus, when the men were so busy winning, they couldn't stop to get their hair cut, I saw practically no cases of physical exhaustion. When people are contented and happy, their productive ability and endurance are increased.

To this end, Mayo¹⁴ advocated development of social equilibrium and *esprit de corps* within industrial plants, here lies the worth of common aim and common understanding between capital and labor. It's a wise employer who girds his worker's morale, that the worker may gird up his loins.

Outside of industry, living conditions control fatigue, these are complex. The kind of food a man eats, the kind of rest he is able to obtain, the happiness of his home life, the temper of his wife, how often he laughs, these exert more than a superficial influence on his well-being. In a preliminary report¹⁵ the American Public Health Association concluded that a large proportion of illness among the in-

dustrial classes arises from respiratory and digestive causes and is not due to toxic material inherent in the course of occupation. A study of wage-earners for the Metropolitan Life Insurance Company by Dr. Louis Dublin, showed, among other things, that the industrial worker at the age of twenty had an expectation of life of forty-two years, as compared with forty-nine years for the non-industrial worker.¹⁶ This shortened life expectancy, shows that the causes producing this difference should be studied, especially the factors which surround the worker, environmental factors with a deeper influence on the general industrial population perhaps than has occupational poisoning.

Still, there can be little doubt that one of the most important predisposing causes of sickness and loss of time is fatigue arising from industrial work. "So tired," says Sir Thomas Oliver, "is an expression which should never be heard from any worker at the close of his or her work day. It signifies exhaustion." Hayburst, Director of the Division of Occupational Diseases of the Ohio Board of Health, listed as minor fatigue symptoms, tiredness, sore muscles, stiff joints, aches and pains, and more severe forms as muscular cramps, obstinate lumbago, wry neck, neuritis, neuralgia, and occupational neuroses.¹⁷ The worker has not much ground for complaint against fatigue to a normal degree, in the course of his work day as long as he remains in good health. Occasional short periods of sickness are more or less to be expected. To determine the actual extent of the adverse influences of fatigue on the health of the worker is not easy. It must be borne in mind that the ill-effects on health do not necessarily manifest themselves at once, their appearance usually is long delayed. Signs of chronic fatigue are loss of appetite, insomnia, indigestion, and gradually respiratory or cardiac derangements. The amount of sickness varies, of course, in different occupations. Ligament weakness, flat feet, round shoulders, dropped internal organs, and bowed backs are commonly observed in workers subjected to undue strain of these parts. In the American statistics of occupational diseases, the commonest fatigue affliction is tenosynovitis, especially of the tendons and sheaths about the wrist joints.

Among 1,217 cases of compensable occupational diseases reported to the Ohio State Department of Health during 1931, 166 (13.6 per cent) were due to tenosynovitis. It's not easy to appraise the role of fatigue in industry and without preliminary medical examination and if employers were wise they would require every applicant for a job to be examined medically, as does the Army and Navy—National employers. In the steady worker,¹¹ anemia, enlargement of the heart, increased blood pressure, circulatory disorders, kidney disease, neurasthenia, or nervous exhaustion may be caused by fatigue, but after all, these are also caused by life itself. However, no matter what part or parts of the organism are overworked, the brain and nervous system suffer.¹² Chronic fatigue predisposes to weakness, paralysis of parts, nervous breakdown, and exhaustion psychoses. Women, more liable to physical strain than men, have a higher sickness rate. Youth particularly is easier hurt than grown age. Growth is stunted, the dissipation of reserve force lead to deformities, a weakened constitution fosters a liability to chronic disorders. Relative to the importance of fatigue in its relation to accidents, some support the contention that more accidents happen during the later morning and later afternoon work.¹⁷ In 1911, Bogardus¹⁸ found that in the 2,678 accidents studied by him, fatigue was present in eighty-two per cent. Fatigue gives loss of muscular accuracy with a consequent increase of accident frequency. Have you ever contrasted your handwriting when rested and when tired? Vernon, however, working for the British Association Committee, stressed the influence of the psychical state of the worker in the causation of accidents and considered inexperience, lighting, and temperature as also responsible in part, as based on his observations in various factories.¹ Recent studies¹⁹ have shown the importance of rest periods in reducing accidents to workers in dangerous occupations. Informed opinion is that tiredness makes for accident.

There is little need to add that from the social aspect spending all a worker's energy on his job should not be required. If he employs all his powers on his task, he has none left for outside pursuits, to

which every man is entitled, and these may be—but often aren't, judging by the circulations of the yellowed journals—his higher life. After excessive expenditure of energy, mental processes become uniform and stereotyped.²⁰ Mechanical movements are done automatically and conscious attention is elsewhere. Loss of time from sickness, in which fatigue figures much, is economically of concern to the worker, as well as to the employer. The wage-earner's income is lessened and he and his family lose content and comfort.

Along with tiredness is noise. Today noise is listed in factory hazards with gases, fumes, dusts, toxic liquids, bacteria, and peculiar chemical and physical radiations. During the last five years there has been much probing of the problem of noise. Probably comment on the activities of the Noise Abatement Commission in New York has pushed the examination of mental and physical effects. It is somehow absurd that science should be called on to prove by theorem and decibels that noise annoys. Wealth of research has gone to prove the obvious in our streets and houses. However, when we regard noise in industry in relation to hearing, some controversy comes. Bartlett²¹ of the University of Cambridge, believes that only in highly selected and special occupations is there any evidence of serious damage to hearing caused by noise. Ten years ago, twenty-five noisy trades were listed in which workers were known to suffer from industrial deafness. Today the list may be extended. Frankel,²² working in nine heavy industrial plants in New York, found very little evidence of impairment of hearing without earlier history of bad ear conditions. Still, it must be noted that the group subjected to the greatest noise showed the greatest percentage of hearing deterioration.

Impairment of hearing, however, is insidious and at first hardly noticed, and we must accept the fact that hearing is reduced in many persons constantly exposed to very loud noises. But that this figure runs from this cause to sixty or eighty per cent of the population, as I read in a technical journal of last year, is frankly bosh. Printing has, of course, led to the multiplication, but fortunately

not the perpetuation, of many foolish statements. However, some auditory organs are badly damaged by prolonged exposure to loud noise.

Direct lesions of the internal ear caused by noise have been demonstrated by German investigators²⁵. In a pamphlet issued by the German Society of Industrial Hygiene, we are told that noise can impair hearing by intensity as well as duration. A single strong sound impression, such as a whistle or explosion, is particularly injurious if it occurs suddenly or unexpectedly, the auditory nerve endings in the cochlea may be damaged or the drum burst. Auditory nerve deterioration has also been demonstrated by Lurie, of Harvard, in recent research from continuous exposure to constant noise of loud quality.

The German report goes on to explain that not every human ear is injured by loud continual industrial noise. "The greater the power of resistance of the organism, and the healthier the organ of hearing, the less harmful is the effect of noise." Directions also are given there for the care of the ears, and protection is recommended by plugs of gauze saturated with petrolatum or wax. Apprentices and young workers are advised to have their ears examined by a specialist before beginning work in a noisy plant. During the period of employment, this examination should be repeated occasionally in order to find out if hearing is being impaired.

Very loud noise, as stated by Fowler in a New York Report, has a disrupting action in addition to a fatigue effect.

It may actually tear apart the drum membranes and the finer structures in the middle and inner ears. Hemorrhage from broken vessels, swelling from blocked circulation and degeneration of the nerve cells and fibers may occur.

This physical injury may cause deafness, head noises, dizziness and other distressing symptoms. In degree and permanence, injury is proportional to the intensity, duration, frequency, and suddenness of the noise wave impact, and the facility with which it passes into and through the middle and inner ears. Remember that every sound wave is a push and a pull, a squeeze and a suck of every tissue and structure through which it passes and upon which it impinges. The normal ear has a remarkable tolerance to intense sounds but once the critical or safety point is passed, injury follows. It is believed that one

of the causes of progressive deafness is overwork and strain of the defense mechanism of the ear, the mechanism which serves to protect the ear from loud noise.

Experiments with accurate hearing measurements in use at the present day confirm these statements but do not as yet give much information about the endurance of noises for months and years. Hence, the extent of the effects upon man cannot be quantitatively estimated.

Undoubtedly, progressive deafness in workers in noisy trades, such as boiler makers, should be included among work hazards to be compensated by insurance, and may come to be recognized as compensable affections. Protection can be given such workers, however, as was given in War to gun crews.

Considering the vibratory character of industrial noises beside the sound effect, excessive and prolonged as they are, it is readily understood that they not only disturb the ear mechanism but also jar the nervous system directly. Investigations of the physiologic effects on intracranial pressure were carried out in the Department of Neurology at Bellevue Hospital by means of a drum placed on skull defects in patients previously operated on, pressure variations were graphed. A sharp loud report produced a notable irregular disturbance and a rise in intracranial pressure to four times normal. A second noise caused a second peak in the curve. Constant noise excites and irritates, it alters conduct, it causes loss of temper, and plays a part in quarrels. To overcome the effect of noise, strain is put on the nervous system—leading to neurasthenic and psychasthenic states. But long before emotions are disturbed, others changes have taken place: heightened pulse rate, heightened blood pressure, and some irregularities in heart rhythm.

That disturbance may occur without the subject being conscious of it, is borne out by experiment. At the University of Michigan it was found that the noise of a passing taxicab raised the blood pressure of a sleeper—and sounds of rushing cars, sounds of hurry, by suggestion and association rather than by loudness, destroy equanimity.

Intense auditory excitation was reported by other investigators as directly

Among 1,217 cases of compensable occupational diseases reported to the Ohio State Department of Health during 1931, 166 (13.6 per cent) were due to tenosynovitis. It's not easy to appraise the role of fatigue in industry and without preliminary medical examination and if employers were wise they would require every applicant for a job to be examined medically, as does the Army and Navy—National employers. In the steady worker,¹¹ anemia, enlargement of the heart, increased blood pressure, circulatory disorders, kidney disease, neurasthenia, or nervous exhaustion may be caused by fatigue, but after all, these are also caused by life itself. However, no matter what part or parts of the organism are overworked, the brain and nervous system suffer.¹² Chronic fatigue predisposes to weakness, paralysis of parts, nervous breakdown, and exhaustion psychoses. Women, more liable to physical strain than men, have a higher sickness rate. Youth particularly is easier hurt than grown age. Growth is stunted, the dissipation of reserve force lead to deformities, a weakened constitution fosters a liability to chronic disorders. Relative to the importance of fatigue in its relation to accidents, some support the contention that more accidents happen during the later morning and later afternoon work.¹⁷ In 1911, Bogardus¹⁸ found that in the 2,678 accidents studied by him, fatigue was present in eighty-two per cent. Fatigue gives loss of muscular accuracy with a consequent increase of accident frequency. Have you ever contrasted your handwriting when rested and when tired? Vernon, however, working for the British Association Committee, stressed the influence of the psychical state of the worker in the causation of accidents and considered inexperience, lighting, and temperature as also responsible in part, as based on his observations in various factories.¹ Recent studies¹⁹ have shown the importance of rest periods in reducing accidents to workers in dangerous occupations. Informed opinion is that tiredness makes for accident.

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which every man is entitled, and these may be—but often aren't, judging by the circulations of the yellow journals—his higher life. After excessive expenditure of energy, mental processes become uniform and stereotyped.²⁰ Mechanical movements are done automatically and conscious attention is elsewhere. Loss of time from sickness, in which fatigue figures much, is economically of concern to the worker, as well as to the employer. The wage-earner's income is lessened and he and his family lose content and comfort.

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PLOWING THE BABY CROP UNDER

The wholesale slaughter of little pigs and the wholesale plowing under of the tender crops is apparently being matched by the wholesale non-production of new citizens. We might almost say that the baby crop is being plowed under, along with the corn and the cotton.

A steady decrease in the fertility of American women is alarming students of population trends. Dr. Louis I. Dublin, vice-president of the Metropolitan Life Insurance Co., told an audience of women at the Child Study Association recently.

By the year 1980, unless new forces are brought to bear to increase the birth rate, 36 per cent of the population of the United States will be over 50 years old, Dr. Dublin said.

"And we're talking about old age pensions," he said. "Who's going to pay for them?"

The present excess of births over deaths—700,000 a year—is a misleading figure, Dr. Dublin said, because the population now includes "an unnaturally large number of women of child-bearing age, resulting from the fecundity of prior generations."

In a comparatively few years, he warned, there will be a sharp decline in birth rate and increase in death rate.

Birth control is the greatest single factor in bringing about this situation, he said, and its influence may be expected to grow.

An underlying cause, he said, is the shift of population from farms where children are an economic asset, to cities, where they are more of a liability from a financial standpoint.

There has been no decline in the marriage rate, Dr. Dublin said and, contrary to popular notion Americans marry younger now than fifty years ago. Though divorces have increased to a point where two out of every nine marriages terminate that way, it has not seriously affected the increase in population, he said.

"Believe me, the problem is keeping statesmen awake nights, both here and abroad," Dr. Dublin said. "In England they had more deaths than births in the first six months of this year. The fate of the race is a matter of serious concern to informed Englishmen."

"The same thing is true to a growing extent in this country."

"Unfortunately the most fertile areas from a population standpoint are those where schooling and standards of living are lowest."

"America will be compelled to replenish itself on a large scale from its backward areas."

"I am sure that fact lies behind the development of the Tennessee Valley Authority and other federal agencies doing similar work."

SECURITY OR INSECURITY?

The blessings of social security have hardly dawned upon America as yet, according to Lady Astor, M.P. who sailed for England the other day. Here is something to think about as we fill out our

tax-blanks. She said "Why, in England three out of every five pounds of a person's income goes to the Government for social security." Write your own comment.

increasing the arterial pressure, especially in the systolic phase. Smith and Laird,²⁶ experimenting on loudness of auditory stimuli, found that in four healthy human beings a decrease of thirty-seven per cent in the number of stomach contractions per minute results from eighty to ninety decibel stimulation. In some subjects there was a complete change in the type of contractions, and the size of the major contractions was considerably diminished. In a series of tests, Harmon²⁷ observed that unexpected and unfamiliar noise introduced during mental work, may increase the metabolic rate, heart rate, the breathing rate and volume.

Work in quality and quantity is not the same under noisy conditions as under quiet. In an investigation by Weston²⁸ into the performance of weavers under varying conditions of noise, it was shown that those who were partially protected by the use of ear defenders were able to attain a higher standard of efficiency than weavers of similar original proficiency exposed to the full clatter of the shed. On the other hand, Pollock and Bartlett²⁹ observed, in printing rooms, that many apparently harmful effects of noise tended to disappear as the workers became used to the condition of their occupation. Adaptation is aided by the uniform and rhythmic nature of certain industrial rackets—auditory or social—which are accepted as part of the working background of the task. Automatization of the task occurs and adaptation may be made fairly easily to such continuous noises of pure tone—but at a cost. Persons in good health can adapt themselves to harmful influences, nor do they realize energy and virtue is going out from them, that fatigue is on the way, and that toleration takes its toll.

The ability of the organism to adapt itself to noises of various kinds, as pointed out by E. D. Friedman, does not imply a lack of damage to the nervous system. He says

It speaks rather in favor of the great elasticity and adaptability of the human organism to various stimuli in its environment. It is not advisable to tax this elasticity too much.

More definite action should be taken to end or control industrial noises, much can be done. Sound absorbing materials, sound filters, silencers, balancing of rotating parts, particularly high speed ones, the mounting of machinery on anti-vibration supports or sound insulation of machines from buildings, proper distribution of machines, and various other methods and contrivances by which noise can be greatly reduced, have been developed by enterprising engineers. Some progress is seen in practical application. In the designing of new factory buildings today, devices for lessening noise are included. An acoustic consulting service in sound control, auditorium acoustics and noise abatement has been inaugurated by the Western Electric Company. The National Standards Association representing a number of technical organizations is studying the subject of acoustical measurements. These movements in industry toward noise prevention are signs of grace, kindness, and enlightened self-interest. The elimination of noise is profitable, so it begins to get some of the attention accorded to other problems such as lighting, heating, and ventilation.

The streets, too, are better though not yet sylvan meadows. The tintinnabulation of the milk wagons, the clatter of the emissaries of sanitation, the clangor of the brakes and horns have been a little lessened—And for this, much thanks. Only the hospital ambulances continue needlessly but sentimentally in their old wild raucous way, endangering about as much life and limb and happiness as they would likely salvage—and the volume of their hateful shrieking varies inversely with the importance of the institution they advertise—How long, Oh Lord, How long?

410 E. 57 St

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TABLE I
243 DIABETIC PATIENTS ANALYZED ACCORDING TO AGE, SEX, AND BLOOD PRESSURE

	1-9 yrs		10-19		20-29		30-39		40-49		50-59		60		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	No	%	
Males	3		0				10		15		10		9		50		
Females		1		3		1		18		28		46		22		119	
Total	3	1	0	3	3	1	10	18	15	28	10	46	9	22	169	69.5	
NORMAL BLOOD PRESSURE (below 150)																	
Males	0		0		0		1		0		1		1		3		
Females		0		1		0		2		4		21		11		39	17.3
Total	3	1	0	4	3	1	11	20	15	32	11	67	10	33	211	86.8	
SYSTOLIC 151-170																	
Males	0		0		0		0		1		3		2		6		
Females		0		0		0		0		5		10		11		26	13.2
Total in age gr	3	1	0	4	3	1	11										
Patients in Each Decade																	
No	4		4		4		31		53		91		56				
%	1.6		1.6		1.6		12.8		21.8		37.5		23.1				
TOTAL (151-260)																	
No	0		1		0		3		10		35		25		74		
%	0		.41		0		1.2		4.1		14.4		10.3		30.4		

merely indicates that the individual is suffering from a disturbance of carbohydrate metabolism resulting in the faulty distribution of glycogen and fat. Because of the inability of the liver and muscles to store glycogen, the resistance of the patient is lowered, predisposing him to infection and increasing the risk in surgical procedures. Furthermore, the hyperglycemia may act as a culture medium in the presence of infections. Another interesting factor in the relationship of arteriosclerosis and diabetes is the fact that up to the present time no evidence of arteriosclerosis has been observed in the lesser circulation of diabetics, a fact which speaks against the idea that hyperglycemia is the cause of arteriosclerosis. I am therefore in full accord with the opinion of O'Hare,³ Moschowitz,⁴ and other investigators who regard hypertension as a predisposing factor in arteriosclerosis rather than hypercholesteremia and hyperglycemia.

Pick,⁵ in fact, has shown that arteriosclerotic changes in the eyegrounds occur ten times more often in hypertensive individuals than in individuals with normal pressure. Because of these opinions and findings, it was of interest to note the incidence of hypertension among diabetics.

Occurrence of Hypertension

To determine the incidence of hypertension in cases of diabetes, I made a comparative study of 243 diabetic cases and 938 non-diabetic cases as observed in my own private practice.

While we cannot with certainty state what the normal pressure of an individual may be, we have considered the systolic pressure from 120-150 mm of mercury as the upper normal limits above the age of forty.

As shown in Tables I and II, blood pressures below 150 occurred in a larger percentage (84.2%) of non-diabetics than in diabetic patients (69.5%). On the other hand, 17.3 per cent of the diabetic series showed pressures ranging from 151-170 and only 10.9 per cent in the non-diabetic series showed these pressures. Blood pressure ranging from 171-260 occurred in 13.2 per cent of the diabetics as compared with 4.9 per cent of the non-diabetics. In other words, systolic pressures above 150 were recorded in the present study in 30.4 per cent of the diabetic series and only 15.6 per cent of the non-diabetics. The greatest percentage of hypertension cases was found in diabetics between the ages of fifty and sixty.

It is of interest to note that these observations are in approximate agreement with those of Kramer,⁶ who noted a systolic pressure of 150 or more in thirty-nine per cent of his series of diabetic patients, the majority, as in the present series, occurring during the sixth decade. Kylin,⁷ Major,⁸ Joslin,¹ and Hitzburger,⁹ are among the observers who also noted a higher blood pressure in diabetic individuals of advanced years, than in a similar age group of non-diabetics. These findings substantiate my opinion and that of the other observers previously mentioned, that hypertension may account for the frequent occurrence of arteriosclerosis in diabetes because of its great incidence in this disease.

Relation of Hypertension

Because of the frequent occurrence of

ARTERIOSCLEROSIS AND HYPERTENSION IN DIABETES MELLITUS

JACOB SCHWARTZ, M D, Brooklyn

Physician Beth-El and Brooklyn Women's Hospital

The diabetic individual is known to suffer more from the complications of diabetes than from the disease itself. This statement applies not only to the pre-insulin era but is true at the present time as well. With the introduction of insulin, the management of the diabetic patient has been greatly simplified and results have been so satisfactory that today few patients are seen in diabetic coma. The danger of infection and the risk of surgical interference have also been minimized with the introduction of insulin to such a degree that the majority of surgeons do not hesitate to operate upon diabetic patients.

Increased incidence of Gangrene and Arteriosclerosis

It is remarkable, however, that simultaneously with the reduction of incidence of diabetic coma and other complications, an increased frequency of gangrene has been apparent, with a corresponding advance in the mortality rate. Whereas the mortality rate from diabetic coma has been lowered from sixty per cent, prior to 1914, to five per cent at the present time, the rate from the effects of gangrene has advanced from 2.3 to 10.4 per cent. Equally striking during this period has been the more frequent incidence of arteriosclerosis in diabetics. This rose from fifteen to forty-seven per cent.¹ This coincident increase in the occurrence of gangrene and arteriosclerosis would seem to suggest a definite relationship between the two conditions.

Diabetic gangrene appears to be the result of a gradual circulatory disturbance caused by arteriosclerotic changes in the extremities, rather than a result of the hyperglycemia. Many of my patients with severe hyperglycemia have not developed gangrene. On the other hand, patients with comparatively mild diabetes did

develop gangrene. This would indicate that the latter condition is probably the result of vascular changes and not of hyperglycemia.

If this is true, how are we to account for the presence of arteriosclerosis in diabetes?

Relation of Arteriosclerosis

1 Span of life It must be remembered that the span of life of the diabetic patient has been lengthened through the free use of insulin, thereby adding to the number of older subjects of that disease. Inasmuch as arteriosclerosis is present in the majority of older persons, an increased occurrence of arteriosclerosis in diabetic individuals is therefore to be anticipated.

While this accounts to a certain extent for the increase of arteriosclerosis, other reasons must be found to account for the great advance of arteriosclerosis among diabetics.

2 Hypercholesteremia This condition, heretofore regarded as a factor in promoting arteriosclerosis, has at the present time become a negligible factor through the use of insulin.

3 Hyperglycemia The question arises whether prolonged hyperglycemia induces arteriosclerosis. An analysis of my own cases showed that hyperglycemia occurred in varying degrees in diabetic subjects from 160-500 mg per one hundred c.c. of blood. The hyperglycemia in these cases was no index to the degree of arteriosclerosis found. Williams,² in a discussion of White's paper, reports a high blood sugar in a majority of his juvenile diabetics for the greater part of the time, over periods ranging from three to ten years. These children have developed normally and, according to Williams, have suffered no ill effects from the prolonged hyperglycemia. Similarly, I have found that the majority of older diabetic patients feel better with a blood sugar above normal. We very often see cases of cardiac pain caused by low blood sugar. It therefore appears that hyperglycemia, *per se*, is not harmful. It

Read Before the East New York Medical Society, May 6, 1935

Their findings agreed with Wilder's Warren,¹⁸ following a study of 156 consecutive autopsies on non-diabetic patients, arrived at the following conclusions

A. Practically any lesion found in the pancreas of the diabetic patient can be duplicated in the pancreas of non-diabetics

B. It is impossible from the study of the pancreas to diagnose the presence or absence of this disease. Therefore, one does not know how many cases are due to arteriosclerosis or other causes

While the preceding theories show the possibility of disturbed carbohydrate metabolism in certain hypertensive individuals, which may ultimately develop into diabetes if there is an anlage towards the disease, nevertheless, these theories do not wholly account for so many diabetics having hypertension

Preponderance of Hypertension in the Female

In a further study of my own patients, the following data has been obtained. As seen in Table II, in this series of 938 consecutive cases, the systolic pressure in 790 or eighty-four per cent of the cases ranged from 110 to 150. The distribution of sex was about equal in this group with the males slightly predominating. One hundred and two patients showed a systolic pressure ranging from 151-170. Among these were thirty-two males and seventy females, the proportions changing radically from that of the previous group with women now predominating approximately two to one. In the third group of patients whose systolic pressure ranged from 171-260, there was a total of forty-six, of which fifteen were men and thirty-one women, the ratio again being two to one.

The same thing held true among diabetic patients. As seen in Table I, pressures varying from 151-170 occurred in three males as compared to thirty-nine females. Blood pressures between 171-260 were recorded for six males and twenty-six females.

These observations would tend to demonstrate that there is a preponderance of hypertensive cases among members of the female as compared to the male sex, in both diabetics and non-diabetics. Correlating the fact that diabetes occurs more commonly in the female, in the above series the ratio was three to one, with

the fact that high blood pressure also occurs more often in the female, it is not difficult to understand the frequent occurrence of hypertension among diabetics, a fact which, I believe, has not previously been brought out in studies on the relationship of hypertension and diabetes.

In discussing the reasons for the high incidence of diabetes among women,¹⁹ I called attention to the fact that women suffer more often than men from endocrine and metabolic disturbances. The female is subjected to these disturbances during menstruation, pregnancy, lactation, menopause, and various infections such as puerperal and gall-bladder diseases. These conditions tend to lower the carbohydrate tolerance of the female, subsequently predisposing her to diabetes. The same theory, I believe, may help to explain the high incidence of hypertension among women. It is my opinion that there is no relation between hypertension and diabetes other than, as stated before, prolonged hypertension may lead to arteriosclerosis in the vessels of the pancreas and cause diabetes in a small number of hypertensive individuals, in just the same way as it may lead to cerebral sclerosis or sclerosis of the coronary or renal vessels, depending upon the region involved. The reason we see so many hypertensives among diabetics is because the disease occurs more frequently among women than among men and hypertension is also more common in women.

Relation of Persistent Hyperglycemia to Hypertension

Thirty-two diabetic patients were under my constant observation for a period of from two to five years, although the duration of the disease in these cases was many years. During this period (2-5 years), many blood pressure readings were taken, and a comparison of the blood pressure at the beginning of treatment and at the end of the period revealed these findings:

In seventeen or 53.1 per cent of these cases, the blood pressure was lowered, in five or 15.6 per cent of the cases the pressure remained the same, and in ten or 31.3 per cent the pressure had increased. A careful study of the charts of those patients whose blood pressure had gone up,

hypertension in so large a percentage of diabetics, many students in this field regarded hypertension as the precursor of diabetes. Some hold that increased blood pressure indirectly predisposes the individual to this disease, but others again, believe that persistent hyperglycemia influences blood pressure. Within the last two decades a rapid advance in research work has taken place in this country. This brought forward many new laboratory methods which are easily applied in clinical medicine. This has been produc-

epinephrin is produced in the medullary portion and not in the cortical portion of the gland, it is difficult to see how such an increase would be accounted for. However, Rabin¹² observed tumors in the medulla of adrenal glands in cases of hypertension which may be of significance in increasing the amount of epinephrin in the blood. Goldzieher,¹³ has shown that the adrenals are involved in the pathogenesis of hypertension, giving rise to a decrease in carbohydrate tolerance and resulting in hyperglycemia and diabetes in the sequence mentioned. The possibility that epinephrin may

TABLE II
938 NON-DIABETIC PATIENTS ANALYZED ACCORDING TO AGE, SEX, AND BLOOD PRESSURE

	1-9 yrs		10-19		20-29		30-39		40-49		50-59		60		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	No.	%
Males	0		0		99	99	98	87	93	83	81	68	40	42	411	
Females	0	0	0	0	99	99	98	87	93	83	81	68	40	42	379	
Total	0	0	0	0	99	99	98	87	93	83	81	68	40	42	790	84.2
					SYSTOLIC		151-170									
Males	0		0		1	1	2	11	6	11	10	22	13	25	32	10.9
Females	0	0	0	0	100	100	100	98	99	94	91	90	53	67	892	95.1
Total	0	0	0	0	SYSTOLIC		171-260									
Males	0		0		0	0	0	2	1	6	9	10	5	13	15	4.9
Females	0	0	0	0	0	0	2	11	6	11	10	22	13	25	31	
Total in age gr	0	0	0	0	100	100	100	100	100	100	100	100	58	80	938	100
Patients in Each Decade																
No.	0		0		200	200	200	200	200	200	200	200	138			
%	0		0		21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	14.8			
					TOTAL (151-260)											
No.	0		0		2	15	24	51	56	56	56	56	56	56	148	
%	0		0		2	1.0	2.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	15.7	

tive of valuable information in cases of hypertension. O'Hare,³ was the first in this country to observe a lowering of the carbohydrate tolerance in persons with essential hypertension and he believed them to be potential diabetics. Herrick,¹⁰ in several studies, observed that 10-30% of his hypertensive cases showed hyperglycemia. Based on these findings, several theories have been presented to explain the coincidence of hypertension and hyperglycemia.

1 Metabolic theory. Herrick was of the opinion that the fact that hypertensive patients were formerly placed on high carbohydrate, low protein diets, and that these patients as a rule had a tendency to overeat, caused a strain on the pancreas and led to hyperglycemia and ultimately diabetes.

2 Hyperadrenalemia. Oppenheimer and Fishberg¹¹ collected from the literature fourteen cases of hypertension with tumors of the cortical substance of the suprarenal glands. This was interpreted as significant in increasing the epinephrin in the blood, a substance known to influence carbohydrate metabolism and arterial tension. But since

circulate in the blood in an inactive lipid combination from which adrenalin will split off under appropriate circumstances, has been suggested frequently, but was not substantiated in a recent extensive study undertaken by Wakerlin and Brunner.¹⁴ No significant vasoconstricting properties were found by these observers in the blood of hypertensive individuals.

3 Arteriosclerotic theory. Various writers, including O'Hare,³ Albutt,¹⁵ and Moschowitz,⁴ believe that prolonged hypertension will cause arteriosclerotic changes in the pancreas and particularly in the isles of Langerhans, lead to hyperglycemia and subsequently to diabetes. It is my opinion, however, that arteriosclerotic changes in the pancreas causing a disturbance of the carbohydrate metabolism, is the cause of diabetes in a very small percentage of individuals, because the severity of the disease does not correlate with the findings in the pancreas. This opinion is substantiated by the work of Wilder,¹⁶ who found that in most severe cases of diabetes, the pancreatic lesions were trivial and severe pancreatic lesions were frequently found in mild cases of diabetes. Gibb and Logan¹⁷ reviewed a series of 147 autopsy protocols

CURRENT TRENDS IN MEDICAL EDUCATION

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Current trends in medical education in the United States can best be evaluated in the light of the changes which have occurred in this field of professional education in the last thirty years and the growing appreciation of the wider responsibilities of medicine as an agency of community as well as of individual health. It is not always appreciated that nation wide recognition of proper standards of medical training and licensure is of recent origin. A few universities have maintained excellent schools of medicine for many years but until only a short time ago a large majority of the schools were proprietary and in many instances commercial institutions.

One need only examine the demands of the various state boards for licensure to get a picture of the minimum requirements of medical education. In 1904, for example, only twenty states had any requirements of general education whatever and only ten of them required graduation from a high school. No state demanded any college training preliminary to the medical course which in many schools at that time was only three years in length. The responsibility of protecting the public from ill-trained and unqualified physicians, the rapid development of the medical sciences, and the recognition of the dependence of sound clinical medicine upon the principles of those sciences brought about a remarkably rapid elevation of the standards of medical education in the brief span of three decades.

In the process of elevating the standards of medical education it was necessary to establish rigid, detailed requirements to permit the enforcement of those standards. Many of these requirements became crystallized into rules, regulations, and law. The inevitable result was rigidity and a deceptive uniformity in a field of knowledge that has been going through

phenomenal growth. At no period in history have there been such rapid additions to knowledge regarding disease and health. Medical faculties and licensing bodies endeavored to add new subjects as they developed and to institute new requirements and examinations so rapidly that great overcrowding of the curriculum and a body of external regulations resulted which have made it very difficult to adapt medical training to meet changing needs.

We are now in the midst of a new phase of medical training based upon a wider appreciation of the fact that medical education is governed by the same principles as other fields of education and by a deeper appreciation of the larger public and social responsibilities of medicine. It is now widely recognized that the premedical student, the medical student, the intern, the hospital resident, the general practitioner, the specialist, and the public health administrator are, from the educational point of view, merely different phases in the training of personnel for the care of the sick and the preservation of health. Medical education, therefore, cannot be regarded as independent of general education on the one hand and of the professional needs of the community on the other.

Time will not permit a discussion of premedical education beyond emphasizing the fact that that period should not aim to be preprofessional in character but rather to provide opportunity for the student to secure a broad cultural education. The selection of students for medicine should be based upon the individual qualifications of the student and not merely on the length of his preliminary education, his grades, or the subjects which he may have taken in college. After all, the purpose of a medical training, broadly conceived, is to prepare a cultured and edu-

*Read at the Annual Meeting of the Medical Society of the State of New York,
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showed that the average increase was about ten points. Furthermore, in most of these cases there were other factors present such as cardiac involvement, nephritis, etc., which might have been responsible for the increased pressure.

Mosenthal²⁰ studied several patients for a period of seven years to determine the influence of blood sugar upon blood pressure and has concluded that hyperglycemia does not increase blood pressure. In the light of these findings, I have definitely come to the conclusion that at the present time there is no evidence to indicate that prolonged hyperglycemia bears any relation to hypertension.

Conclusions

1 Arteriosclerosis and not hyperglycemia is the cause of gangrene in diabetic individuals.

2 Hypertension is more common among diabetics than among non-di-

betics. In this series, 30.4 per cent of diabetic patients showed a blood pressure above 150 while only 15.6 per cent of non-diabetics showed a blood pressure above 150.

3 Hypertension occurs more often in the female than in male individuals. The ratio in the series of non-diabetics was two to one, diabetics was three to one.

4 It is my belief that no relation exists between hypertension and diabetes. However, hypertension may be an indirect factor in the causation of diabetes. Prolonged hypertension may cause arteriosclerosis involving the vessels of the pancreas and cause a disturbance in the internal secretion of the pancreas and result in diabetes.

5 According to my findings, hyperglycemia cannot be considered a factor in the causation of hypertension.

766 EASTERN PARKWAY

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OXFORD'S MEDICAL WINDFALL

Lord Nuffield, the British motor manufacturer, has given \$6,250,000 to Oxford University for the establishment of a post-graduate medical school—the largest single gift, it is said, by an individual donor to any British university. There is already at Oxford an Institute of Medical Research on a small scale, founded by Lord Nuffield, and he has made generous gifts to Oxford hospitals. He has also just given \$400,000 to Guy's Hospital to enlarge the nurses' home. As quoted in the *London Times*, he says of his Oxford gift:

I realize that progress in medical science is reaching a stage where it is desirable for those who work in the field of research to undergo a period of post-graduate training in modern methods of investigation, to keep in close touch with developments in the sciences ancillary to

medicine, and to pursue their inquiries unhindered by the cares of private practice and of routine teaching.

In regard to medical practice, I welcome the increasing tendency to regard all health services, preservative, preventive, and curative, not as separate entities but as constituent parts of a combined effort to promote and maintain the good health of the community. It is specially gratifying to me to learn that attempts to give effect to this ideal are being made in Oxford. Thence it is an easy step to the conception that the presence of a post-graduate medical school in a university town in which all the scientific departments are within easy reach of the hospitals, and in which coordination of health services will, I hope, be soon established, would improve the position and the facilities of those already engaged in clinical work in either institutional or general practice.

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In passing, one comment may be made about the great number of students applying for admission to medical schools. This situation is not confined alone to the medical profession but exists in all other fields of higher education. It must be borne in mind that during the last forty years, while the population of the country has increased about ninety-five per cent, the number of graduates of the so-called institutions of higher learning have increased about 770 per cent. In other words, the graduates of these institutions have increased eight times as rapidly as the population. It is inevitable that great pressure of numbers should be brought upon the medical schools, which in the last thirty years have been reduced from one hundred and sixty-two institutions to sixty-seven approved four year schools.

The objectives of undergraduate medical education, of which the internship should be regarded as a part, are to equip the qualified student to begin the practice of general medicine or the pursuit of advanced training and to equip him to continue his own self education throughout his professional life. The undergraduate course of study can only begin the education of the physician for he must remain a student all his life if he is to discharge fully and to his own satisfaction the responsibilities which will fall upon him.

The student should not only be prepared in the necessary technical training and scientific critique but he should also be imbued with a proper attitude toward his professional and public responsibilities and be able to give sound advice on the various problems presented by the patients who come to him, which of necessity requires that his training be based on a broad and sound foundation. It is important that the training be permeated with an understanding of the social and economic problems and trends with which medicine must deal and which are likely to influence the forms and opportunities of practice in the future.

While it is highly important that the purely intellectual talents of the student should be developed to the fullest, it is equally necessary that the qualities of temperament, human sympathy, and insight which are required for dealing with

the manifold human problems of medical care should be emphasized. The physician needs an understanding of, and must be able to treat, the man as well as the disease. Probably no field of endeavor comes closer to the everyday problems of humanity than medicine. Instinct, experience, and judgment in dealing with human affairs are essential for the physician and cannot be made a part of any formal scheme of education but must come from example, precept, and that unselfish devotion to the care of the sick and unfortunate which has been the tradition of medicine throughout the ages.

The success which a physician may obtain is determined in large measure by his personal qualifications, among which the most outstanding are integrity, industry, judgment, resourcefulness, and common sense. These qualifications are largely individual and apart from those of previous formal education and training. They emphasize the fact that many of the qualities of the real physician are additional to his purely intellectual and technical abilities.

These considerations make it clear that the level and objectives of medical training are governed in large part by the qualifications of the students who are admitted to the professional training. It is generally recognized, however, that the type of student who studies medicine, as in any other profession, is determined to a considerable extent by the professional opportunities and the social recognition of the physician in the community, which emphasizes further the broad underlying influence of the social and economic factors in medicine.

The concept of what the medical course should attempt to provide is changing. In the past the effort has been made to acquaint the student, as far as his time, energy, and capacity permitted, with as many facts, methods, and diseased conditions as could be presented in the schedule assigned. Because of the limitations of time this necessarily meant the demonstration of many conditions in a didactic manner. The present attitude is to prepare the student to study and appraise the nature of the disturbance present in a given patient, whether it be physiological, psychological, emotional, or social, for it is upon a correct understanding of the

disturbance in the patient that rational diagnosis and treatment must be based. Instruction of this character can be accomplished in the time available only through the intensive study of a limited number of conditions illustrative of the principles involved.

The enormous increase in knowledge, the widening public responsibilities of medicine, the development of various technical procedures for diagnosis, treatment, and prevention make it evident that the basic course cannot provide a student with an adequate knowledge and experience in all phases of medical science and practice. The hope of presenting the entire subject satisfactorily in the usual course must be abandoned as an unnecessary and futile endeavor because no individual can be expected to master all phases of medicine. A subdivision of labor in medical service is inevitable and desirable.

The amount of knowledge and scientific accomplishment which can be secured in a reasonable period of training by students of different types, capacity, and preparation is limited. The aim should be to provide each student with an adequate body of knowledge and a supervised experience sufficient to allow him to begin the practice of medicine with safety or to serve as a foundation for subsequent graduate education. In seeking to accomplish these purposes, emphasis should be kept constantly upon the fact that the degree of scientific interest and the methods and habits of thought attained by the medical student determine to a considerable extent the level of his future practice and his capacity for intellectual growth.

Some have believed that the elevation of undergraduate medical training to a high level would largely solve the problems of keeping physicians abreast of new developments and would insure that the public receive the best of care. It is generally appreciated, however, that even at best the undergraduate training can deal only with the elementary and introductory principles of medicine. The mass of scientific knowledge and experience is far too great to be covered in detail in any course. Furthermore, knowledge is not static. Each year many new discoveries are brought forward, some of which occasionally modify the concepts of disease as well as treatment and prevention.

Keeping physicians aware of and competent to use the best current knowledge is one of the most important features of a satisfactory medical service for the country. The continued education of physicians in practice is an essential feature of an adequate health program.

The great need of the country is for better, not more, physicians and for opportunities for those in practice and those who are qualified to specialize to prepare themselves adequately for their responsibilities to the public. A widespread and permanent improvement in the quality of medical service cannot be secured until graduate medical education has been developed at least to the level of excellence of the better undergraduate courses and has been closely articulated with the basic training. The public is confused by the large number of doctors who claim to be specialists whereas, in reality, there is a shortage of properly trained experts to meet the medical needs of the country. Present facilities and opportunities are quite inadequate for the training of a sufficient number of properly qualified specialists, although the number of hospitals and laboratories in which such training may be given is sufficient if educational supervision and direction can be secured. Only a few institutions now provide what may be regarded as a thorough preparation for a specialty.

There are indications that there will soon be developments in graduate medical education that will be as far reaching and vital to the public welfare as those which have been witnessed in undergraduate training during recent years. The different groups of specialists have organized national boards for the purposes of determining qualifications for admission to the various specialties and of publishing lists of qualified specialists. An Advisory Board for Medical Specialties, in conjunction with the program of the American Medical Association, has been organized to assist in establishing uniformly high standards and in coordinating the activities of these boards. As a result of these efforts a national Register of Specialists can shortly be created, admission to which will be based on a training and experience in each limited field of practice which may be regarded as sufficient to insure proper protection of the patient and the public.

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LATE EXTRA-UTERINE PREGNANCY

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Eight patients with extra-uterine pregnancies of more than thirty-four weeks duration have been admitted to the wards of the Hospital Division of the Medical College of Virginia since December 1930. We feel that this complication is of sufficient interest to justify a brief report of these cases and some of our observations concerning them.

Four of these patients had intraligamentous pregnancies of eight, ten, eleven, and thirteen calendar months duration. From the histories of these women, it seems probable that in three, the fetuses were viable until at least forty weeks after conception. All four fetuses had died before the patients were examined by us. One probably died about the sixth month.

Four women had abdominal pregnancies of thirty-six, forty, forty-one, and forty-four weeks duration. Two of these women were delivered of normal living babies. Death of the fetuses had occurred prior to hospitalization of the other two.

Two of the eight patients have previously been reported by the author. Both have subsequently been delivered of intra-uterine pregnancies, and another of this group is now about twelve weeks pregnant. Our observations warrant a review of their histories.

Seven of the women were admitted to our service and operated upon by the author. Six of these lived and one died. One patient was admitted to the service of the late Dr G. Paul LaRoque. She was operated upon by him, but died a few days later. The baby from this patient lived.

CASE 1 L I (intraligamentous pregnancy forty-two weeks duration), negro, twenty-five years old, married seven years, had one living child and one stillborn baby. She was referred by her physician because of prolonged difficult labor and vaginal hemorrhage for three days.

Her abdomen was distended to the size of a term pregnancy. A globular mass the size of a large orange was palpated to the right of the midline, and just above the symphysis pubes. It contracted at five minute intervals, the patient complaining of pain during the contractions. Fetal small parts were palpated posterior to the above mentioned mass and just above the umbilicus. No fetal heart sounds were heard. On vaginal examination the cervix was long, soft, and eroded. The external os was closed and lacerated a little. The cervix was continuous with the contracting mass in the right lower quadrant. X-ray examination confirmed the presence of a dead fetus. Extra-uterine pregnancy was diagnosed. Under spinal anesthesia, the abdomen was opened through a right paramedian incision. The body of the uterus was enlarged to the size of an orange, being pushed anteriorly and to the right. The pregnancy was in the left broad ligament. A macerated fetus, the size of a term pregnancy, was removed. The placenta was attached to the base of the broad ligament, and could only be partially removed because of its attachment over several large blood vessels. The intraligamentous cavity was packed with gauze to control hemorrhage and the edges of the broad ligament were sutured into the lower angle of the abdominal incision for drainage. The upper portion of the incision was closed without drainage. The gauze packing was entirely removed by the seventh day. This woman's temperature remained around 100°F for twenty-eight days. The abdominal sinus continued to drain a little during this time. She had no urinary symptoms and no abdominal distention.

This patient has recently had a normal intrauterine pregnancy and after fourteen hours labor delivered spontaneously a living normal female child which weighed seven pounds. Her convalescence was uneventful and temperature remained normal.

CASE 2 P W (intraligamentous pregnancy eleven months duration), married, negro, thirty-four years old, had never been pregnant before. She was referred by her

These general considerations are producing certain changes in the medical course proper. Perhaps one of the most significant of these is the growing emphasis upon the fact that the basic training is a unit, not a series of isolated and unrelated subjects and that the specialized features of training should be developed in the graduate program. There has long been a tendency to regard the medical course as a series of independent subjects but it is now recognized by some faculties that the entire training is itself a unit. It is on this basis that the correlation of teaching, joint exercises between different departments, and comprehensive examinations, as examples, have been introduced rather widely.

Another aspect of importance is the endeavor to individualize instruction and to place responsibility as far as practical upon the student for his own training. This is an endeavor to develop in the student sound methods and habits of study which will equip him to continue his own self education after graduation. The individualization has taken the form of small sections, seminars, conferences, study periods, clinical clerkships, the case method of instruction, and various other devices of this character, in contrast with earlier methods of teaching largely by lectures, demonstrations, and amphitheater clinics. It is widely recognized that many phases of medicine cannot be taught by the faculty, they must be learned by the student under direction in order to give him that body of knowledge and skill which accumulated experience has emphasized as necessary for the sound practice of medicine. This attitude emphasizes the fact that the student is the unit of education, not the curriculum or the faculty, important as they are, and places greater stress upon the opportunities for learning and for the development of self-reliance, judgment, and resourcefulness.

Many diseases and disabilities are known to be preventable. An increasing proportion of instruction places emphasis upon this aspect of medical care for it is well-known that a sound knowledge of anatomy and physiology is a basis of preventive medicine quite as much as it is

a basis of disease and abnormality. An effort is made in the course to equip students so that they may be able to render a competent service of prevention and of treatment to families as well as to individuals.

Probably the most defective part of medical training today is the internship. Internships are usually intended to provide resident services for the hospitals without due regard to the educational needs of the student. Changes being made in the medical course proper will require readjustments in the internship, which should be more closely articulated with the period of formal instruction if the best results are to be expected.

Sound medical care requires that the physician understand the importance and influences of social, economic, and psychological factors as they are related to the problems of health. Not much is given in the usual medical course in the way of formal instruction in these matters, but students are brought in daily contact with the social and economic aspects of medicine in the hospitals, clinics, social service, nursing, and other programs, and they are securing considerable appreciation of the importance of these phases of medical care.

The placing of medical education under the supervision and in the atmosphere of the university is leading inevitably to a wider interpretation of the responsibilities of medicine in a modern society and is making available knowledge and research from a number of other fields of knowledge which have a bearing upon the patient in his emotional, economic, social, and spiritual life as well as in those fields which in the past have been largely restricted to the medical sciences. It is this larger point of view regarding the functions and responsibilities of medicine in community life and the application of sound principles of education to the needs of medical training that perhaps will have the widest influence in shaping and focusing the objectives of medical training and which promise to make our profession of even greater importance in modern civilization.

normal, child living Her second pregnancy terminated in an early spontaneous complete abortion

When admitted to the hospital, she was about forty weeks pregnant. She had no history of any discomfort or pain and no symptoms except constipation until four days before hospitalization, when intermittent abdominal pains occurring every twenty minutes commenced. She had been given castor oil and quinine. A bougie had been introduced into the cervix and uterine cavity. The vagina had been packed with gauze. Following the above treatment, pains occurred at five minute intervals, but no uterine contractions were observed. The baby presented as a breech. Fetal heart sounds were loudest in the left upper quadrant, rate 160 per minute.

Her physical condition was poor. Temperature 98.6°F, pulse ninety, blood pressure 132/80. Erythrocytes 2,920,000, leukocytes 17,200. A catheterized specimen of urine showed a heavy trace of albumin, occasional hyaline and granular casts, and numerous pus cells.

This patient's rhythmical pains ceased after several hours. She changed very little in the next four days except that she became more exhausted, her temperature increased to 101°F, and her pulse increased to 110 per minute. Because of exhaustion and no progress, laparotomy under spinal anesthesia was resorted to December 29.

Through a midline incision a full term, living fetus was found free in the abdominal cavity. The uterus was in the anterior position, about the size and consistency of a three months pregnancy. The placenta was attached to the left ovary, and the broad ligament. The fetus was removed, and a supracervical hysterectomy and bilateral salpingectomy performed. This patient went into shock on the operating table, but improved when she was given 1100 c.c. of normal saline solution intravenously.

Following operation, her temperature fluctuated between 102° and 104°F. She was enormously distended, and died on the fifth day after operation of peritonitis and bronchopneumonia. The baby was normal, and lived.

This was reported as a ruptured ovarian pregnancy by Dr. Phillips, the pathologist.

CASE 6 E. J. (abdominal pregnancy, 34 weeks duration). In 1934¹ I reported a case of abdominal pregnancy which occurred in a negro, aged twenty. It was her first pregnancy, and of about thirty-four weeks duration. She complained of nausea, abdominal pain, and constipation during the entire pregnancy. For four weeks previous to

hospitalization, the abdominal pain had been more severe and associated with tenderness over the entire abdomen.

Physical examination showed an undernourished small woman whose blood pressure was 124/68, pulse one hundred, temperature 98.6°F. The fetus presented as a transverse. It was entirely above the level of the umbilicus, and easily palpated. The fetal heart sounds were loudest in the right upper quadrant. Palpation of the patient's abdomen and manipulation of the fetus failed to cause uterine contractions. The vaginal examination revealed a soft cervix in the normal position, with the canal closed. The uterus and pelvic structures could not be outlined.

Laboratory findings were erythrocytes 2,550,000, hemoglobin forty-five per cent, leukocytes 6,850. Wasserman reaction positive.

Under gas anesthesia, the abdomen was opened through a right para median incision. The fetus was free in the abdominal cavity and no definite sac was seen. The baby was removed. The placenta was attached to several coils of intestines, the uterus, both broad ligaments, and the anterior abdominal wall. It was left in situ, and the cord tied short. The abdomen was closed without drainage. The next day the patient was given a transfusion of 500 c.c. of whole blood.

After the second day this woman's temperature remained below 99°F. She had no distention, and voided spontaneously. The abdominal incision healed by primary union. The patient's urine was positive for pregnancy according to the Friedman test for thirty-five days after operation.

In February 1935, I delivered this woman by cesarean section of a second pregnancy, which was intrauterine. Careful inspection of the peritoneal cavity showed that the placenta, which had been left in the abdomen at the first operation, had been completely absorbed. The omentum was adherent to the lower angle of the abdominal incision and to the uterus at the site of the insertion of the right tube. No other adhesions were seen. The mother had a normal convalescence, and both babies are living and well.

CASE 7 E. J. (abdominal pregnancy), negro, aged twenty-three, married one year, gravida two, para one, was admitted to St. Philip Hospital August 2, 1935, because of pregnancy of forty-four weeks duration, dead fetus and several unsuccessful attempts to deliver the baby.

Her past history was unimportant. Menses commenced at age of fourteen, regular every month, duration two days without pain. She

physician because of pregnancy of eleven months duration and several unsuccessful attempts to induce labor. She had felt better since fetal movement ceased six weeks before hospitalization.

Her abdomen was symmetrically enlarged to the size of an eight months pregnancy, but the pregnancy was low. No fetal heart sounds were heard and we were unable to recognize the fetus on palpation. Vaginal examination showed the cervix firm, and long, with the external os closed but lacerated from a recent injury. The cervix was continuous with a mass the size of an orange, located in the left side of the pelvis.

X-ray examination confirmed the presence of a fetus, and abdominal operation was performed. The treatment was the same as in Case 1, except that this pregnancy was in the right broad ligament. The packing was completely removed by the sixth day. Her temperature remained below 101°F. The abdominal sinus had closed twenty-one days after operation.

Recently this woman has missed three menstrual periods, and is again pregnant.

CASE 3 M I (intraligamentous pregnancy, thirteen months pregnant), negro, twenty-five years old, married, was admitted to the hospital July 31, 1934. One former pregnancy was normal, and resulted in a living child which weighed ten pounds at birth. When seen this time she complained only of an abdominal mass and stated she had been pregnant since June 1933, but had felt no fetal movements since March 1934, four months before she entered the hospital. She had menstruated regularly during April, May, June, and July.

Examination showed the lower abdomen was distended with a mass which extended up to the level of the umbilicus. No fetal heart sounds were heard and manipulation failed to stimulate any contractions. X-ray examination showed evidence of a dead fetus.

Vaginal examination showed the external os closed, cervix long, firm, pushed to the right, and posterior. We were unable to outline the uterus.

Extra-uterine pregnancy was suspected. Under spinal anesthesia, the abdomen was opened, through a right para median incision. The body of the uterus was normal in size, pushed to the right, and under the symphysis pubes. The pregnancy was confined in the left broad ligament. We delivered fetus, placenta, and membranes, and then found it necessary also to remove the uterus to control hemorrhage. The abdomen was closed without drainage. Her convalescence was uneventful, and she was

discharged in good condition fourteen days after operation.

CASE 4 L A (intraligamentous pregnancy), negro, thirty-six years old, married. She had two living children and one former pregnancy terminated as an early spontaneous complete abortion.

She entered the hospital in July 1935, because of fainting spells, cramp-like, low abdominal pain, and irregular vaginal bleeding. Friedman's test was positive for pregnancy, and operation was advised because it was thought to be an ectopic pregnancy. She left the hospital against advice, but returned three months later because of pressure and pain in the lower abdomen.

Examination showed the lower abdomen contained a tender mass, the upper border of which measured twenty cm above the symphysis pubes. Below the umbilicus, the abdomen was extremely tender and somewhat rigid. No fetal heart sounds were heard. X-ray examination showed evidence of a dead fetus. Vaginal examination showed the cervix firm, closed, anterior, and high under the symphysis. The external os was closed. A diagnosis of ectopic pregnancy was made.

This patient was given a transfusion of 500 c.c. of whole blood. Then she was given spinal anesthesia, and the abdomen opened through a right para median incision. The body of the uterus was in the anterior position. It was soft and enlarged to the size of a three months pregnancy. A very much distended right broad ligament contained the pregnancy. The ligament was opened, and a macerated fetus removed. The placenta was attached to the base of the broad ligament, and we were unable to remove it. The intraligamentous cavity was packed with gauze, and the abdomen closed as in Case 1. The packing was entirely removed on the third day after operation. This patient had no bladder symptoms, very little abdominal distention and her temperature remained below 101°F. The sinus drained for three weeks, but was completely healed when she was discharged four weeks after operation.

CASE 5 (Dr LaRoque's case) R B (abdominal pregnancy, forty weeks duration), negro, aged forty, married twenty-three years, gravida three, para one, was admitted to St. Philip Hospital December 25, 1930, because of term pregnancy and irregular labor pains for four days.

Her early history was unimportant. Menses commenced at fourteen years of age and periods had been regular every twenty-eight days except during pregnancies. Her first pregnancy and labor were

head was in the upper right quadrant. There was marked overlapping of the cranial bones, suggesting a dead fetus. Although this patient improved slightly after she was admitted to the hospital, it was thought wise to induce labor. She was given one ounce of castor oil and five grains of quinine, but showed no evidence of uterine contractions.

The next day an intern attempted to introduce a Voorhees bag No. 4 into the cervix. He stated the bag was introduced with considerable difficulty, because the cervix was long and thick, and the internal os admitted only one finger. There was considerable resistance when the bag was inflated. The presence of the bag failed to stimulate uterine contractions during the next twelve hours. An eight ounce weight was then attached to the bag, and several hours later, without any evidence of labor, the bag was removed.

The next day this patient was examined by the author. On abdominal palpation, the fetal head was high, and in close proximity to the diaphragm. The baby seemed entirely too high in the abdomen for an intra-uterine pregnancy, and we were unable to stimulate any contractions. On vaginal examination, the cervix was long and thick. One finger was introduced with ease through the internal os. The body of the uterus was enlarged to the size of a two months pregnancy, and pushed somewhat to the left and anterior. A sponge forceps was introduced into the uterine cavity encountered resistance four inches from the external os of the cervix. An attempt was made to outline the uterine cavity by injecting lipiodol. Although fifteen c.c. were used, it was difficult to prevent leakage of the lipiodol through the cervix, and the x-ray plate was unsatisfactory. A diagnosis of extra-uterine pregnancy was made.

This patient was transfused with 500 c.c. of whole blood. Under gas and ether anesthesia, the abdomen was opened through a right para median incision. On opening the abdominal cavity a somewhat thickened and very vascular omentum was seen immediately under the abdominal incision. The omental blood vessels were very large, and some were probably more than one-half cm. in diameter. Careful inspection showed a definite sac under the omentum, extending over to the left side of the abdomen and up under the diaphragm, but not adherent to it. Below, the sac extended to the inlet of the true pelvis, and it was adherent to both broad ligaments and the posterior surface of the uterus about three cm. below the Fallopian tubes. The fundus and anterior surface of the uterus appeared to be normal. The body of the uterus was

soft and approximately the size of a three months pregnancy. The left anterior surface of the sac was opened, and a macerated fetus which weighed seven pounds, eleven ounces, was removed. It was apparently normal before death. The sac contained no amniotic fluid, and there was no evidence of internal hemorrhage. Further examination showed that the maternal surface of the placenta was attached to the posterior surface of the omentum, to several coils of the intestines, and it extended downward to the pelvic inlet. It was evident that any attempt to remove the placenta would cause profuse hemorrhage, therefore it was left in situ. The cord was tied short with catgut, and the abdomen was closed without drainage.

Temperature was 100.4°F. the day before operation and following operation it remained below 100°F until the evening of the second day, when at one reading it was 103°F. During the next sixteen days her temperature varied between normal and 101°F. During this time she received three transfusions of whole blood. The erythrocyte count remained around 3,580,000, leukocyte count around 16,000, and hemoglobin about sixty per cent.

On March 31, eighteen days after operation, her temperature at one reading was 103°. During the next seventeen days it varied between 100° and 103°F. Her abdomen was very much distended—but never rigid—and she had no evidence of intestinal obstruction. Her appetite remained good, and she had a daily bowel movement. On April 17, thirty-five days after operation, this patient had two very copious liquid stools, and her temperature dropped to normal. The abdominal distention, which had persisted since operation, decreased markedly. The patient stated she felt much better. Her pulse rate dropped from one hundred to ninety, and she improved rapidly.

On April 17 the leukocyte count was 6,900, but the erythrocyte count and the hemoglobin estimations remained unchanged. Her urine was tested by the Friedman test at frequent intervals, and it remained positive for pregnancy until April 6, twenty-four days after operation, and at least thirty-five days after the death of the fetus.

The abdominal incision healed by primary union. On vaginal examination, April 20, thirty-eight days after operation, the cervix was closed, body of the uterus small and directed anteriorly, and to the left. The pelvis was negative except for tenderness. She has continued to improve.

The diagnosis and treatment of these

had one former pregnancy which was normal, and had terminated in 1933 as a normal delivery. She remembered having a severe pain in the lower left abdomen about two months after her last menstrual period, but she denied having had any feeling of faintness. Except for nausea in the first three months, her pregnancy had been uneventful, until fetal movements ceased three weeks before hospitalization.

This woman stated she had been given castor oil and quinine to induce labor, and her physician told her he ruptured her membranes.

Her physical condition was poor. The blood pressure was 100/70, temperature 102°F, pulse 120 and weak. Erythrocytes 3,420,000, leukocytes 7,700, hemoglobin fifty-four per cent. Her abdomen was enlarged to the size of a term pregnancy, tender and rather tense. We were unable to outline the fetus, and abdominal manipulation failed to cause any noticeable uterine contractions. Vaginal examination showed the cervix soft, thick, long, and in about the normal position. The os was closed. The body of the uterus was to the left of the midline, soft and enlarged to the size of a three months pregnancy. We were unable to trace any connection between the cervix or body of the uterus and the abdominal mass.

X-ray examination showed a fetal skeletal outline with overlapping of the cranial bones. A diagnosis of abdominal pregnancy was made. Under spinal anesthesia, the abdomen was opened through a right paramedian incision, and a macerated hydrocephalic baby, weighing nine pounds and twelve ounces, was removed.

The anterior abdominal wall was thin but the peritoneum was adherent to a sac, the wall of which was one-half cm thick. This sac was adherent to the peritoneum of the anterior abdominal wall, to both broad ligaments, and the posterior surface of the liver. It contained the fetus, and 1000 c.c. of dark, thick, bloody fluid. After removing the fetus, the lower part of the sac was packed with gauze to control oozing, and the upper part of the incision closed without attempting to remove the placenta or membranes. Very little blood was lost during the operation, but the patient's blood pressure dropped to 80/50. She was given 1000 c.c. of a ten per cent glucose solution intravenously, but failed to improve after operation. She was typed for blood transfusion. Three members of her family were suitable for donors, but refused to give their blood. She died six hours after operation.

A partial autopsy was done and the placenta was found attached to the upper an-

terior abdominal wall and to the liver. The sac was also attached on its posterior surface to several coils of the intestines. There was no evidence of hemorrhage. The liver appeared to be largely replaced by the placenta and the damage to this organ probably caused the patient's death.

CASE 8 E W (abdominal pregnancy, forty-two weeks duration), negro, thirty-two years old, married seven years, was admitted to St. Philip Hospital Feb 26, 1936, because of term pregnancy, hypertension, blood pressure 160/110, edema, and albuminuria.

Her early history was unimportant. Her menses commenced at fourteen, were regular every twenty-eight days, and lasted three to four days. Two former pregnancies were normal and both children lived.

When admitted to the hospital she was about forty weeks pregnant. Following the birth of her last child in March 1935, she felt fairly well, and menstruated regularly in April and May. She had no evidence of menses and no vaginal bleeding after May. She felt quite ill during June. Her digestion was poor and she had considerable abdominal pain. Strong purgatives taken orally and mustard plasters applied over the abdomen failed to relieve the patient of her "misery."

In November 1935, five months after her last menstrual period, she noticed a mass in the right side of her abdomen, at the level of the umbilicus, which has persisted, and was not relieved by "mustard plasters."

On February 25, 1936, the night before admission to the hospital, she had severe pain in the left lower quadrant of the abdomen. When examined in the emergency room, she had headache, visual disturbances, and pain in the lower left abdomen. Her temperature was 102°F, pulse 110, respiration 28, blood pressure 160/110. Fetal heart sounds were not heard after admission to the hospital. Examination of the eye grounds showed advanced albuminuric retinitis. An abdominal mass was noted, which was thought to be the fundus of the uterus and measured thirty cm. above the symphysis pubes.

A catheterized specimen of urine contained many casts and four plus albumin. The phenolsulphonphthalein test was done and only fifteen per cent of the dye was eliminated in two hours. Blood examination was erythrocytes 3,840,000, leukocytes 9,600, hemoglobin sixty-eight per cent. Wassermann reaction was positive.

X-ray examination showed that the patient was pregnant. The baby presented as a breech, left sacroposterior. The fetal

The persistence of positive Freidman test for twenty-one and thirty-five days is a most interesting observation, as well as the absence of lactation in those cases where the placenta is left in situ

DR ALFRED C BECK, *Brooklyn*—Dr Ware was very fortunate in having treated personally seven cases of advanced, extra-uterine pregnancy. This condition is so rare that most men seldom see more than one or two cases in a lifetime. His experience, accordingly, is unique.

The loss of only one mother out of seven, a mortality of slightly under fifteen per cent, likewise is worthy of the highest commendation.

Seven of the eight cases reported showed no early evidence of tubal pregnancy. This freedom from early symptoms was not as common in the large series which I collected from the literature in 1919. I wonder if the difference may be accounted for by the difference in the type and mentality of the patients. All of Dr Ware's cases occurred in negro women who might be expected to complain less and, as a result, might very well forget early symptoms.

In case 4, the early symptoms were very definite and included vaginal bleeding. I wish to draw your attention to this fact because many men consider the vaginal bleeding in an ectopic indicative of fetal death. In this particular case, vaginal bleeding occurred and the fetus continued to live. Similarly, vaginal bleeding coincident with continued life of the fetus was observed in about one-third of the cases which I collected.

While the x-ray was helpful in the diagnosis of most of the cases reported by Dr Ware, apparently some difficulty was encountered in diagnosing two of them, since a bougie was introduced into the uterus of one and a bag was inserted in another. I recall that this was a rather common error in many of the cases that I collected. From my study I also concluded that absence of contractions was a valuable diagnostic aid.

Dr Ware did not mention the percussion findings in his cases. Because a loop of intestine may often be found in front of the gestation sac in an abdominal pregnancy, the finding of a tympanic note near the midline, in the region which ordinarily is occupied by the full term uterus, may be helpful in those cases which have not had a previous laparotomy.

As a result of the study of two hundred and sixty-two cases collected from the literature and our own experience up to 1919 I emphasize the following points in the treatment of this condition:

- 1 After opening the abdomen, all manipulations, including the extraction of the child, should be made very carefully, in order that partial separation of the placenta might be avoided.

- 2 Before deciding upon the method of handling the placenta, a careful exploration should be made to determine the proper method of procedure.

- 3 The placenta should be removed only in those cases in which its blood supply is accessible.

- 4 Before any attempt to remove the placenta is made, the vessels which supply the placental site should be ligated.

- 5 Whenever preliminary control of the circulation in the placental site is impossible, the placenta should be left in the abdomen.

- 6 The abdomen should then be closed without drainage except in the presence of hemorrhage and infection.

- 7 A placenta so retained will ultimately be absorbed.

- 8 Suturing of the sac to the abdominal wound and packing of its cavity with gauze should be limited to those cases in which bleeding necessitates the use of a tampon, or the presence of infection requires drainage.

In Dr Ware's cases, all of these procedures were used and I was glad to learn that the two mothers, in whom the placenta was left without drainage, recovered uneventfully. Since my original paper was written, two of my associates have had full term, living, abdominal pregnancies and, in both of these, the placenta was left within the abdomen and the wound was closed without drainage. Both of these mothers survived and, in one instance, when the abdomen was subsequently opened, as in one of Dr Ware's cases, no trace of the placenta could be found. As the good results of this type of treatment accumulate, I wonder if we should not be less anxious to remove the placenta. Treatment then would be very simple and would consist only in the removal of the child and the use of every effort to avoid partial separation of the placenta and hemorrhage from this source. Had such a routine been followed by Dr LaRoque in case 5, possibly the patient might have survived. It likewise might have been advisable in case 7, in which instance the patient was in bad condition at the time of operation, and died of shock within a few hours after its completion. I wonder why Dr Ware did not consider simply the removal of the child and closure of the abdomen without drainage, in this particular case.

I wish to thank Dr Ware for bringing these cases to our attention and congratulate him upon his unique experience and the excellence of his results.

cases has impressed us with the importance of managing each according to its indications

I am much indebted to Dr Alfred C Beck, of Brooklyn, N Y for the information obtained from his paper, "Treatment of Extra-Uterine Pregnancy after the Fifth Month"² My decision to leave the placenta in two cases, and close the abdomen without drainage was influenced by his experimental work and suggested treatment

Any one interested in late extra-uterine pregnancy will find a complete bibliography on "Full Term Intra-Abdominal Pregnancy" in a most comprehensive paper published by Drs Hellman and Simons last year³

Summary and Conclusions

The absence of any history suggestive of early tubal rupture in seven of the patients is important

The absence of any particular discomfort or pain until the fortieth week in three of the broad ligament pregnancies is significant

The patients with abdominal pregnancies all complained of vague abdominal pain, tenderness, indigestion, and constipation

Rhythmical uterine contractions were seen and palpated in one patient, and probably occurred in two others

Manipulation of the fetus failed to cause any rhythmical contractions in any of our patients

In abdominal pregnancy the fetus may either be palpated easily through the abdominal wall as in one of the cases reported, or difficult to palpate as in two other cases

The uterus was enlarged to the size of

a ten weeks pregnancy in seven

The cervix was closed, long, thick, and firm in seven of our cases

The fetus usually assumes an abnormal position

X-ray examination is a valuable aid in diagnosing extra-uterine pregnancy

In two patients with abdominal pregnancies, no attempt was made to remove the placenta, and the abdomen was closed without drainage The urine from these two patients gave positive Friedman tests for twenty-one and thirty-five days after operation

A moderate degree of anemia was noted in all cases, but the blood picture was of no particular diagnostic value

Complete absorption of the placenta from the peritoneal cavity of one patient was proven when her next pregnancy was terminated by cesarean section

Two patients in whom the placentas were left showed no evidence of lactation This suggests an inhibitory action of the placental hormones on the breasts

Extra-uterine pregnancy was diagnosed in seven of the cases without utero-salpingography This procedure is usually unnecessary

Of the eight cases reported, two died, a maternal mortality of twenty-five per cent. Seven of these patients were operated upon by the author, and among these there was one death, a maternal mortality of 14.28 per cent

828 W FRANKLIN ST

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Discussion

DR ALFRED M HELLMAN, *New York City*—The very fact that one institution had eight cases in five years proves the importance of this condition, and should make us grateful to Dr Ware for bringing it to our attention in such great detail and in so masterful a fashion

I reported one case in the literature—in this case the woman and baby both lived I had no trouble with the placenta as it was easily stripped from the posterior surface of the uterus, and where firmly

attached was removed with the left tube and ovary

The diagnosis should be made more often than is now the case

The diagnosis having been made operation is inevitable, and the problem then becomes, how shall the placenta be treated? If easily removable as in my case, of course, removal is desirable, if over firmly adherent, especially to intestines, it seems safest to leave it in situ, and when it becomes absorbed you feel how grand is nature

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I wish to thank Dr Ware for bringing these cases to our attention and congratulate him upon his unique experience and the excellence of his results

DR WARE (closing) I appreciate the discussion of my paper

All of the cases reported were referred to the hospital after examination and considerable manipulation. The type of pregnancy was not diagnosed correctly in any of these cases, before we examined the patients. The previously mentioned internal manipulation which I consider usually unnecessary, was done before these women were examined by us.

In our cases the pregnancies were anterior to the intestines, and consequently the value of percussion was limited.

I wish to stress the importance of a careful history, and physical examination. Abdominal palpation is particularly important.

The absence of any uterine contractions when the fetus is palpated abdominally and the absence of any contractile sac around the fetus suggests an extra-uterine pregnancy.

In our cases the cervix was long, thick, and more firm than in late intrauterine pregnancy.

Case 5 might have lived if no attempt had been made to remove the placenta.

Gentleness in examining these patients and at the time of operation will certainly reduce trauma and hemorrhage.

The placenta should be left in situ in all cases of abdominal pregnancy where its removal may be difficult. If the placenta is left, the abdomen should be closed without drainage.

DOCTORS AND DANGEROUS DRIVERS

Should the doctor be contented with patching the automobile victims up after the wreck? Or should he notify the Registrar of Motor Vehicles if he finds a driver who, physically or mentally, is a menace on the highway? If, for instance, asks the *New England Journal of Medicine*, a physician sees in private practice or at a hospital clinic a patient who has had epileptic attacks, should he assume responsibility for notifying the Registrar? Patients having petit mal attacks are probably more of a danger to the moving traffic than those who have grand mal attacks. On the other hand, if a patient, under long observation and adequate treatment for epilepsy, no longer suffers from attacks, should his license be renewable?

The same line of argument is to be considered in relation to mental disease. Are there not patients who still have mental symptoms driving on our highways? If a patient, moreover, has been an inmate of a State hospital for the insane or a private institution, ought he to have his license

revoked permanently? Are there not patients who make such a good recovery that they could again be trusted to drive an automobile? In addition to patients with nervous and mental disease, there are, of course, the large group who have definite physical handicaps. Is a patient with only one eye or who has partial vision in each eye a menace as a driver of an automobile? There are many other physical handicaps, such as the loss of an arm or a leg, which need to be considered.

This is not a new problem and provisions are made by the office of the Registrar of Motor Vehicles to handle the situation if the facts in regard to the individual are known to him. There must, however, be many individuals who have defects unknown to the Registrar, who are driving on highways. Should the medical profession take any action in this matter? Many physicians who are also conscientious citizens would like authoritative advice in regard to what to do when the problem arises in their own practice.

More than 200 physicians assembled on Nov 21 at Sherry's to celebrate the retention of 275 physicians to cooperate with the Police Athletic League by examining the 35,000 minors enrolled with it to determine their physical fitness for the sports in which they wish to engage.

Dr N Thomas Saxl, medical director of the league, said the purpose was to discover and correct any defects which might have an adverse influence upon them. Children

found to need medical attention were referred either to their own physicians or to the proper clinic.

Others who spoke were Deputy Police Commissioner Byrnes MacDonald, president of the league, Dr Bernard Sachs, Dr Ira S Wile and Dr C Ward Crampton, chairman of the committee on preventive medicine of the New York County Medical Society, who presided over the gathering.

TREATMENT OF GENERAL PARALYSIS BY ULTRA HIGH-FREQUENCY HEATING

LELAND E HINSIE, M D and JOSEPH R BLALOCK, M D, *New York City*

The value of the treatment of neurosyphilis, especially general paralysis, by heat-producing agents is a well-established fact. Since the eminent contributions of Wagner-Jauregg, many attempts have been made to reproduce the clinical conditions observed in patients under malarial treatment. These efforts have included the use of bacterial and chemical agents, hot water baths, and electropyrrexia, more particularly diathermy and ultra high-frequency.

Our own studies, dating from 1923, have been carried out at the New York State Psychiatric Institute and Hospital, first (from 1923-1930) with malaria and thereafter (1930 to date) with an electrical apparatus. Through the cooperation of the General Electric Company, we have been able to carry out research work with an ultra high-frequency apparatus. The present communication comprises a resume of the clinical use of such an apparatus among patients with general paralysis.

The technical aspects of the apparatus need not be elaborated upon in this group. As regards the treatment technique

The patient lies in a celotex box, which is placed between two large condenser plates. In from sixty to ninety minutes the body temperature is raised from normal to 104 or 105°F. The current is then turned off and the patient is placed in a warm bed. He is wrapped in blankets and a few hot water bottles are placed about him. The heightened temperature is maintained around 105°F about seven hours, the blankets are then removed and in one or two hours the temperature returns to normal.

The plan of treatment was such that each patient received ten individual treatments, each on alternate days. Each patient received a total of about seventy hours elevation of temperature over 102°F. Thus the malarial character of the febrile course was simulated.

Between June 1930 and January 1936

we have had 146 patients under treatment. All were adult patients with acquired general paralysis. None had received previous fever or tryparsamide therapy.

The case material may be divided into three treatment groups.

First, *fever only* with no other treatment for at least six months, in most cases there was no subsequent treatment. There were ninety-one patients in this group.

The second group consisted of thirty patients who received the fever series and then a course of twelve or more injections of tryparsamide intravenously. Bismuth was given intramuscularly at the same time that tryparsamide was given.

A third group of twenty-five patients was given tryparsamide just prior to each of the fever treatments. This was done in order to determine the efficacy of treatment when tryparsamide and fever were administered simultaneously. A half dose (15 gms.) of tryparsamide was given before each fever treatment. There were two treatments per week in order to lessen the danger of injury to the optic pathways. Tryparsamide and bismuth were usually continued after the termination of the fever series.

The patients were reexamined at regular intervals following the cessation of treatment. The figures are revealed in Table I.

First for discussion are the results which followed fever therapy alone—the first group. Here we have the largest number of patients followed for the longest period of time. These percentages represent results from ultra high-frequency fever treatment alone.

These results compare very favorably with those obtained under malarial treatment alone.

It is felt that the results obtained by combined treatment, that is fever with tryparsamide given during and after the fever course, are about the same.

In addition to the investigation of the clinical status we have made a practice

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, April 29, 1936

of doing a complete blood and spinal fluid examination prior to the fever series, at the termination of the series, and at approximately three months intervals thereafter

These tests were blood Wassermann, spinal fluid Wassermann, cell count, globulin, protein, and colloidal gold curve. The material is reported in two groups. The first consists of those patients who received fever only. The second consists of the other two groups, those who received fever, some with tryparsamide concurrently, and tryparsamide subsequently.

TABLE I—CLINICAL RESULTS

<i>High Frequency Fever Only</i>					
	6 mo (91) %	1 yr (86) %	2 yr (83) %	3 yr (70) %	4 yr* (73) %
Remission	17	19	18	15	11
Improved	36	31	29	28	27
Unimproved	38	38	34	31	34
Dead (Lost)	8	12	19	23	25 3
<i>High Frequency Fever — Tryparsamide Later</i>					
	6 mo (30) %	1 yr (30) %	2 yr (30) %	3 yr (30) %	4 yr* (30) %
Remission	30	37	37	27	27
Improved	43	33	33	36	36
Unimproved	24	23	27	27	27
Dead	3	8	10		
<i>High Frequency Fever and Tryparsamide — Tryparsamide Later</i>					
	6 mo (25) %	1 yr (25) %	2 yr (25) %	3 yr (25) %	4 yr* (25) %
Remission	28	32	32	30	30
Improved	52	48	48	35	35
Unimproved	16	12	23	23	23
Dead	4	8	12		

Figures in parentheses indicate number of patients.

It was hoped by these studies to throw some further light on the question of the correlation of laboratory and clinical findings. It has been generally accepted that there is a lack of correlation, and that with time all tests gradually become negative regardless of the clinical condition.

Rather than present more statistics the serological changes are being presented in schematic form. The studies covered three years only.

Cells These were reduced quite promptly to normal in three-fourths of the patients. They were maintained as negative in three-fourths of the patients getting fever only and in nine-tenths of the patients receiving combined treatment.

Globulin In this the improvement was slower, reaching the maximum improvement in two years. This amounted to a negativity percentage of under forty-five per cent with fever only, and over sixty per cent with fever and tryparsamide.

As regards the spinal fluid protein, the reduction to normal with fever alone was prompt. When tryparsamide was subsequently given the per cent with normal findings increased up to over eighty per cent at two and three years while with fever only treated patients less than sixty per cent had become negative at these periods.

The changes in the remainder of the tests were much slower, and a much smaller number became negative. As regards the blood and spinal fluid Wassermann reactions and the colloidal gold reaction, about twice as many became negative with fever and tryparsamide as with fever treatment alone (at the one and two year periods).

At the two and three year periods, two-fifths of the blood and spinal Wassermann reactions were negative and two-thirds of the colloidal gold curves were "flat" or negative.

We have, therefore, as a result of these comparisons an indication that the blood and spinal fluid respond far more favorably in all the usual tests when tryparsamide is given in combination with or after ultra high-frequency fever than when this form of fever is given alone.

Study of other aspects such as per cent of negativity in the remissions and unimproved patients has not yet been completed.

It seems important to point out that favorable results were obtained with fever alone. The remission and improved rate was comparable with that obtained by us with malaria.

The patients tolerated the fever series well. An average of five pounds was lost during the course and several sustained no loss but a gain in weight. Only one death occurred which could be attributed to the fever itself.

With our particular ultra high-frequency electrical apparatus, about fifteen per cent received burns, usually blisters. In about 1500 individual treatments there were about six third degree burns.

Summary

We have presented the results obtained with ultra high-frequency since 1930 in 146 patients with general paralysis. The work has been done in a controlled and planned manner. We have shown the results of treatment of general paralysis from two points of view—with fever alone and fever in certain combinations with tryparsamide.

Conclusions

1 With fever treatment alone both the clinical course and the serological pictures are favorably influenced.

2 The use of tryparsamide following fever brings about the most favorable results.

3 There seems to be no advantage in giving tryparsamide just before each fever treatment.

722 W 168 St

Discussion

DR WALTER M. SIMPSON, *Dayton, O*—Doctors Hinsie and Blalock are deserving of praise for the exceptionally accurate manner in which they have utilized control measures to determine the relative efficacy of artificial fever therapy alone as compared with artificial fever combined with chemotherapy in the management of general paralysis. These studies coincide with our own observations that the combination of fever therapy plus chemotherapy is productive of a distinctly higher proportion of favorable results than the use of either pyretotherapy or chemotherapy alone.

At the Kettering Institute for Medical Research, Miami Valley Hospital, Dayton, we have subjected 431 patients to 3204 artificial fever treatments (approximately 17,000 hours of sustained fever) during the past five years. With the exception of occasional mild skin burns which occurred particularly at the beginning of this undertaking, no person has been injured by the treatments. During the first half of this study we utilized an air-conditioned modification of the ultra high-frequency apparatus used by Hinsie and Blalock. We have since devised apparatus (Kettering hypertherm) in which fever is induced and maintained by simple and controlled methods of air-conditioning; high-frequency electric currents are not employed. Deep tissue temperature studies made with thermocouples reveal no essential difference in the deep heating effect when fever is produced by either high-frequency currents or by conditioned air alone.

We have subjected twenty-seven patients with general paralysis to a course of fifty hours of fever therapy plus thirty injections of chemotherapy (bismuth arspenamine sulphate or neoarsphenamine and bismuth). We have felt that it was advantageous to inject the antisyphilitic drug just before the fever treatment is commenced on the basis that the general vasodilatation and increased velocity of blood flow during fever would permit greater diffusion of the chemi-

cal substances. It is ordinarily our practice to subject such patients to ten sessions of artificial fever therapy, each of five to six hours' duration at 105–106°F, at weekly intervals for ten weeks. Following the course of combined pyretotherapy, twenty injections of the antisyphilitic chemical agent are given, at weekly intervals. Twenty-one (77 per cent) of the patients with general paralysis have experienced complete clinical remission, three additional patients have been restored to a working status. Two patients were accorded fifty per cent clinical improvement, one demented patient obtained no improvement. Clinical relapse has not resulted in any case in which remission occurred. Eight of these patients were committed to a local hospital for the mentally diseased, and were brought to the Miami Valley Hospital for treatment. Sixteen of the twenty-seven patients had received presumably adequate chemotherapy, two had relapsed after receiving malaria therapy, and nine had received no treatment.

The fact that similar results have been obtained following the employment of a wide variety of fever-producing agents (malaria, rat-bite fever, relapsing fever, typhoid vaccine and other foreign protein substances, hot baths, hot air, electric blankets, and high-frequency electric currents) provides strong evidence that the common denominator of all of these methods—simple fever production—is the important, if not the only, factor in the production of favorable results. Despite the brilliant results which have been achieved with therapeutic fever following inoculations with malaria, rat-bite fever, and relapsing fever, the fact remains that the engrafted infection is capable of producing great damage, even death may be difficult to control, and is inconstant in its fever-producing properties. The advent of simpler and safer physical modalities has made it possible to treat patients much more uniformly, under controlled conditions, at any desired fever level. The type of apparatus employed is a secondary con-

sideration. Much more important is the adequate training of physicians and nurses who are charged with this work. In the hands of unskilled or unscrupulous persons, the possibilities for harm are great. If candidates for artificial fever therapy are subjected to a thorough diagnostic survey, with particular emphasis upon cardiac, vascular, and renal functions, the possibilities for disaster are greatly minimized. We prefer to regard artificial fever therapy as comparable in many respects to a major surgical operation, particularly as regards the necessity for the careful diagnostic survey to determine eligibility, and the constant attention to the patient by the physician and the nurse-technician during the long treatment.

Artificial fever therapy by physical means is not a simple undertaking. History is repeating itself in the attempts of certain manufacturers to exploit the field by utilizing modern high-pressure sales methods. Some of the apparatus now available through commercial sources is inadequate and dangerous and is sold to any physician without thought of adequate training of the supervising physician and his technical assistants. Artificial fever therapy cannot be entrusted entirely to the technician. It is our firm belief that artificial fever therapy by physical means should be restricted to institutions, in which the physician and nurse personnel has received adequate preliminary training. The production of effectual artificial fever is not adaptable to ordinary office practice. Unless these precautions are exercised this important ad-

venture in therapeutics is almost certainly doomed to a period of discredit, not unlike that which followed the introduction of Roentgen rays. In the hands of skilled and devoted workers, this form of therapy seems destined to occupy an increasingly important place in the therapeutics of several diseases which have been refractory to other therapeutic agencies.

DR WILLIAM BIERMAN, *New York City*—Drs Hinsie and Blalock have made a critical study of the results secured in the treatment of general paralysis by means of physically produced hyperthermia combined with the application of trypanamide. They have called attention to what appears at the moment to be the most effective method of treating syphilis of the central nervous system.

While their results have been obtained by means of the ultra high-frequency current and by subsequent heat insulation, the exact physical technic for the production of temperature elevation appears to make very little difference. The degree of temperature elevation and the time during which it is permitted to endure are the important physical factors.

In our more limited experience in the treatment of syphilis of the central nervous system, we have seen results comparable to those of Hinsie and Blalock. With increasing knowledge of the technic and its method of application, we may reasonably well expect that this method will gradually replace the more generally employed inoculation with malarial organisms.

MEDICAL RADIO BROADCASTS

The Medical Information Bureau of the New York Academy of Medicine announces the following broadcasts from Station WABC and the Columbia Broadcasting network.

Thursday, Dec 17, 1 30 P M—*Speaker* Dr M H Dawson, Asso Prof of Medi-

cine, College of Phys and Surg, Columbia Univ. *Subject* "What Can be done for Arthritis."

Thursday, Dec. 24, 1 30 P M—*Speaker* Dr Robert H Halsey, Prof of Clinical Medicine, Postgraduate Medical School and Hospital, Columbia Univ. *Subject* "How to be the Chauffeur of Your Heart."

The following broadcasts have been scheduled by the New York Tuberculosis and Health Assn under the auspices of the Medical Information Bureau of the New York Academy of Medicine from Station W2XR, Time, 6 00 P M.

Wednesday, Dec 16—*Speaker* Dr James

Ralph Scott, Chairman, New York Diabetes Assn. *Subject* "Diabetes."

Wednesday, Dec. 23—*Speaker* Dr Wendell J Stansby, Asst. Prof of Medicine, Cornell Univ Medical School. *Subject* "Public Health Aspects of Tuberculosis."

PRESENT STATUS OF SURGERY OF THE SYMPATHETIC NERVOUS SYSTEM

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Although the gross anatomy of the sympathetic nervous system had been known for some centuries and the fundamental physiology of it for several decades, it was not until the time of the World War that any successful application of these facts had been made in clinical surgery. It is true that interruption of sympathetic tracts had been tried in the last decade of the eighteenth century but without success. During the World War, Leriche succeeded in relieving the causalgic pain in a number of instances following war injuries to primary nerve trunks or large arteries. Shortly after this, Jonnesco and others following him aroused the interest of the medical world by relieving pain in certain cases of angina pectoris after sympathetic interruption. However, the greatest stimulus to the developments in this new field of surgery came from the investigations of Royle and Hunter, from the controversy concerning certain phases of them, and particularly from their unexpected but accurate observations of the effects of sympathetic denervation on the function of the peripheral vessels and of the bowel. The twelve years which have followed the publication of their first results has been a fascinating story of exploration into the clinical possibilities of intervention on the sympathetic nervous system. While this phase of rapid discovery of new applications has probably not yet terminated, a sufficient interval has now elapsed so that a careful appraisal of results so far achieved will be of value to us both in guiding our clinical course and in establishing a basis for further investigative work in this field.

The chief disorders in the treatment of which sympathetic surgery has been carried out are assembled in Table I. What have been the results?

In the first place, the earliest surgical endeavors, namely by interruption of the cervical or thoracocervical sympathetic chain for epilepsy, glaucoma, and exophthalmic goiter, have been entirely abandoned as they resulted in no important relief of these conditions. These earliest operations were performed in the last decade of the eighteenth century and before the development of the more thorough methods that have been found necessary for a complete sympathetic denervation of the upper extremity. Undoubtedly in view of our present knowledge, the sympathetic denervation accomplished in these first operations in the head and neck regions was incomplete. Recent operations in certain selected cases of epilepsy have not resulted in any more striking permanent relief. I know of no series of glaucoma cases in which sympathectomies have been attempted in recent years. The operative relief in exophthalmic goiter by thyroidectomy has been so satisfactory and the operation itself simpler than cervicothoracic ganglionectomy so that the latter procedure has not been tried in recent times as a treatment for hyperthyroidism.

The relief of pain by periarterial sympathectomy in certain old injuries to arteries and nerves achieved by Leriche during the World War was the first successful application of sympathetic surgery, and the relief of certain types of pain remains today as one of the outstanding contributions in this new field of surgery. Thus the pain of angina pectoris, intractable forms of cystitis, essential dysmenorrhea, that accompanying the peculiar osteoporosis or paroxysmal ischemia following trauma, has in many instances been alleviated by the interruption of sympathetic pathways from the involved area. Where the pain is of sufficient se-

verity to warrant the procedure required, sympathetic surgery deserves trial in these types of painful disorders

In angina pectoris, relief by operations not too extensive for these handicapped

TABLE I

C N S	Epilepsy, migraine, multiple sclerosis
Eye	Retinitis pigmentosa, glaucoma, proptosis
Heart	Angina pectoris, paroxysmal tachycardia
Lungs	Asthma
G I	Paralytic ileus, megacolon
G U	Bladder pain, bladder paresis, reflex anuria, dysmenorrhea
General	Segmental sympathetic pain ('visceral') (including eroding aneurysm)
Endocrine	Exophthalmic goiter, diabetes, 'neurocirculatory asthenia'
Vascular	Hypertension, Raynaud's, vasomotor neurosis secondary to (a) functional nervous disorder (b) or organic nervous disorder (c) organic arterial disorder (d) trauma or fibrosis (including painful osteoporosis)
Sweat Glands	Hyperidrosis
Muscle	Spasticity

TABLE II—SYMPATHETIC INTERRUPTION UNSATISFACTORY

Epilepsy	}	Original uses Royle and Hunter
Glaucoma		
Exophthalmic goiter		
Muscular spasticity		

TABLE III—SYMPATHETIC INTERRUPTION OF PROVEN BENEFIT

	PAIN	PREFERABLE METHOD
Angina		Paravertebral alcohol injection
Vesical		Presacral neurectomy + 2 sacral ganglia
Dysmenorrhea		Presacral neurectomy
Painful osteoporosis		Try parietal, then gangli- onectomy
Vasomotor	MOTOR	Ganglionectomy for permanent
Paralytic bladder		Presacral neurectomy
Paralytic ileus		Novocain
Hirschsprung's disease		Try spinal anesthesia—gangli- onectomy

TABLE IV—SYMPATHETIC INTERRUPTION INSUFFICIENTLY TESTED

Retinitis pigmentosa	Reflex anuria
Migraine	Multiple sclerosis
Asthma	Hypertension

patients was achieved in only a proportion of the cases. Now nearly as satisfactory results have been attained in a much simpler manner by paravertebral alcohol injection which largely eliminates the operative mortality but which has the disadvantage of not being permanent. In addition, the paravertebral injection of alcohol has the further disadvantage of fre-

quently causing a painful neuritis of the nearby intercostal nerves which may be quite troublesome to the patient. In a severe angina, however, neither of these objections outweighs the advantages of the procedure. In addition to relief of pain, motor, inhibitory and secretory functions of the sympathetic nervous system have been suppressed by surgical interruption (Tables II, III, IV).

Let us briefly review by systems the more important of these efforts to influence various diseases. In the central nervous system, in addition to the failure of these methods in epilepsy, sympathetic denervation has also been carried out in migraine and in multiple sclerosis. In neither case has there been sufficient evidence on which to base an opinion of its value. In multiple sclerosis, a disease characterized symptomatically by marked phases of remission and exacerbation and pathologically by diffusely scattered areas of sclerosis, it seems illogical that overcoming a hypothetical spasm in the brain would result in a cure. However, the proof of the benefit of sympathetic denervation in any disease lies in the results accomplished rather than in any theoretical analysis. We should await later reports from those who believe that it may offer therapeutic help in this serious condition.

In the eye, in addition to the earlier trial in glaucoma, sympathectomy has been chiefly carried out for cases of retinitis pigmentosa, on the assumption that underlying the disintegration of the retina in this disease there might be a local spasm of the vessels. The early optimism has been changed to a deep pessimism by recent reports concerning the usefulness of sympathetic surgery in this disease. However, it does not seem to me that this form of therapy has been tried as yet in enough satisfactory cases to form a judgment of its value. We can definitely state that sympathectomy does not restore vision when retinitis pigmentosa has progressed to the stage of blindness. Also, it is probably true that when the degenerative process has advanced so that there is practically no peripheral field and only gunbarrel vision remaining, sympathetic surgery is of little avail. In the earlier cases before such extensive degeneration there may be more benefit

from sympathetic surgery. We have had two cases which showed definite improvement in visual acuity and a slight increase in the peripheral field. Kerr has reported several that seemed to be at least temporarily benefited by cervical sympathectomy. It is to these earlier cases of retinitis pigmentosa that sympathetic surgery in the future should be limited if it is used. A minor application for the eye is the purposeful production of enophthalmus by sympathetic denervation to assist plastic surgery in the control of prolapse of the eye due to an irremedial permanent paralysis of the facial nerve.

In the heart, the chief application has been in the attempted relief of angina which was discussed above. In a few instances, paroxysmal tachycardia has been sufficiently severe and persistent to warrant an attempt to control it by diminishing the sympathetic acceleration apparently with some degree of success. Patients with eroding aneurysm of the aorta have been freed from the severe pain associated with this condition by paravertebral alcohol injections.

In the lung the most important application of sympathetic surgery has been in attempting to relieve intractable asthma. The world literature on this subject was reviewed a few years ago by Phillips and Scott. There still have been too few cases operated upon to form any final judgment as to its value. Some very encouraging results have been reported however in extremely severe instances. Whether a more extensive removal of thoracic sympathetic nerves or the addition of vagus branches (posterior pulmonary plexus) is better, cannot be decided at present.

In the gastrointestinal tract, paralytic ileus not associated with peritonitis but of reflex origin seems to have as its basis an excessive sympathetic inhibition of motor activity in the small intestine. Based on this hypothesis, the temporary paralysis of the splanchnic nerves either by spinal anesthesia or by splanchnic anesthesia has been used with the intuition of peristalsis in many instances. Of course the effect is only transitory and sympathetic inhibition may shortly return in as severe a form as previously. But usually the breaking of the vicious circle with the relief of the distention of the

small intestine seems of definite benefit. The procedure is dangerous if there may be present an unrelieved organic obstruction, a weakening through gangrene of any part of the intestinal wall or a general toxicity. Thus it ought not to be used for example in the ileus associated with lobar pneumonia but it may be a life-saving measure in the early stages of certain forms of extremely severe reflex paralytic ileus. In Hirschsprung's disease of sufficient severity so that major surgery needs to be resorted to, sympathetic denervation has practically replaced the dangerous colectomies that formerly were resorted to in the extreme instances of this disease. Spinal anesthesia is of use as a preoperative test to make sure that the fundamental abnormality is an excessive sympathetic effect on the large bowel. Occasionally the elongated colonic loops may cause mechanical difficulty even after their muscular function has been improved by sympathectomy. Recently, in certain moderately severe cases, spinal anesthesia alone without further sympathetic intervention has seemed to be sufficient to turn the balance toward a more normal bowel function.

In the genitourinary tract, several applications of sympathetic surgery have proved beneficial. In paresis of the bladder where some sacral autonomic function still remains, the unpaired sympathetic innervation coming down outside the spine from higher levels of the cord may produce excessive inhibition. This is found in certain instances of the tabetic bladder and in some lower spinal injuries which do not completely destroy the sacral autonomic centers. By abolishing the sympathetic innervation of the bladder, marked improvement in the function of this organ has been achieved. Also in certain forms of intrinsic bladder pain, particularly associated with tuberculous cystitis and interstitial cystitis (Hunner's ulcer), gratifying results have also been achieved by sympathetic denervation of the bladder. In tuberculous cystitis, if only one kidney is involved, frequently relief will follow its removal but where both kidneys are simultaneously involved, this method is not advisable. Dr Schroeder and I found that for relief of the severe pain associated with deep inflammatory lesions of the bladder wall, di-

vision of the superior hypogastric plexus (presacral nerve) alone is insufficient to overcome this pain, and that it is practically eliminated if in addition to the resection of this plexus the first and second sacral sympathetic ganglia are also removed. Another form of pelvic pain which has proved amenable in many instances to sympathetic surgery is essential dysmenorrhea. When a severe dysmenorrhea is not associated with evident pelvic pathology and does not yield to conventional conservative and hormonal treatment, then presacral neurectomy is well worth trying. Usually if the psychoneurotic case is excluded from the series, this will result in very satisfactory relief. In reflex anuria, attempts to influence the condition by temporarily breaking the sympathetic reflex arc have been made, and it would seem that spinal anesthesia is worthy of a trial in severe forms of reflex anuria.

Attempts to influence certain endocrine functions through the sympathetic nervous system have been of interest. The first of these efforts we have already mentioned in connection with exophthalmic goiter. More recently, the attempt has been made to control certain recurrent forms of hyperthyroidism by sympathetic denervation of the adrenal cortex, the procedure being based on the hypothesis that adrenalin secretion either causes the fundamental metabolic disturbance or augments the effect of some other agent. Another interesting endeavor was interruption of the splanchnic innervation in juvenile diabetes mellitus in order to reduce the amount of insulin required in treatment. None of these have as yet yielded sufficiently definite results to consider that they are of established benefit.

Under certain conditions, the sweat glands function excessively either in local areas (usually with other signs of local sympathetic overactivity) or in larger regions, such as in both feet. This latter condition, hyperhidrosis, may result in sufficient discomfort to the patient or occasionally actually contribute to the maintenance of infection in the constantly damp skin and consequently warrant surgical intervention. Complete sympathetic denervation of the area permanently controls the excessive sweating.

Muscular spasticity associated with

upper motor neuron disorders has long been a serious clinical problem. It was in the effort to control such spastic tonus of the muscle that Royle and Hunter originally undertook their investigations. Although their first reports both in the experimental and clinical fields were quite optimistic in regard to the results, it is distinctly questionable today whether sympathetic denervation really influences the tonus of voluntary muscles in these conditions. However, the field of surgery of the sympathetic nervous system is enormously indebted to this problem as it was the by-products of this work which attracted attention to the therapeutically useful effects of sympathetic denervation on the vessels of the lower extremity and on the function of the large bowel.

The vascular system has been one of the major fields for the application of sympathetic surgery. Although since the time of Claude Bernard's classical experiment the vasomotor control of the vessels by the extrinsic sympathetic nerves had been known, the clinician did not visualize the possible benefit of interrupting this pathway until the accurate observation by Royle and Hunter of vasodilatation in the foot following lumbar ganglionectomy. That this unexpected result might be utilized in the treatment of certain vascular spastic conditions was immediately envisioned, and the test of time has verified the fact that arterial spasm in the lower extremities is satisfactorily controlled by lumbar ganglionectomy. Thus, for example, we have followed for ten years patients who had arterial spasm with thromboangitis obliterans. The vasoconstriction has been apparently permanently abolished, the foot remaining at approximately the vasodilatation level even though episodes of migratory phlebitis are not prevented by the denervation.

In the upper extremity, however, there has been an entirely different story, the inconsistencies of which are only now being resolved. At first, recurrent ischemic attacks in Raynaud's disease after thoraco-dorsal ganglionectomy were attributed to the fact that the sympathetic denervation of the extremity was incomplete. The distribution of vasomotor fibers from the thoracic ganglionated chain to the brachial plexus is very much more complicated than in the case of simi-

lar lumbar rami communicantes. However, after adequate technical procedures were developed for a complete denervation (proved by sweating tests) still typical ischemic attacks could occur in the hand. This fact kindled a lively controversy between those who believed Raynaud's disease to be merely a vasomotor neurosis and Sir Thomas Lewis' school who felt that there was a primary local fault. Recently, this matter has in my estimation been largely cleared up by establishing a humeral mechanism for causing such attacks. Since Elliott's investigation in 1905, physiologists have known that the degeneration of the postganglionic sympathetic fibers may produce hypersensitivity in that organ to circulating adrenalin. The Boston group have proved that such a hypersensitivity to very low amounts of circulating adrenalin exists in the denervated extremity of patients with Raynaud's disease and have actually induced typical ischemic attacks in such under conditions which cause an outpouring of adrenalin. Such hypersensitivity to circulating adrenalin does not result if the interruption of the sympathetic pathway is preganglionic, i.e. if the sympathetic end organs are still in direct communication with their ganglion cells. Based on these known physiological and clinical facts, they are advising preganglionic interruption and have devised an operative method for effectively accomplishing this. In true Raynaud's disease, we do not as yet know the fundamental cause of the excessive vasoconstriction. In addition to this idiopathic type of vasoconstrictor spasm there is a very interesting group of vasomotor neuroses definitely secondary to other conditions. Thus functional nervous disorders, such as hysteria, may be accompanied by a distinct local vasoconstriction in the affected area. Organic nervous diseases, particularly those associated with fibrosis whether of central or peripheral origin very often appear to produce an irritation of vasoconstrictor cells or tracts. Organic arterial disease, where an inflammatory or irritative lesion extends through the wall of the vessel to involve the adventitious coats and consequently probably to reach afferent sympathetic nerve fibers, often causes important vasomotor disturbances apparently of reflex

origin. The after effects of trauma or fibrosis probably by a similar involvement of the afferent sympathetic limb of a reflex arc are frequently associated with trophic changes, hypersensitivity to cold, local edema, ischemic attacks, etc., which quite definitely seem to be due to a vasomotor dysfunction. When the cause of such secondary vasomotor neuroses can be attacked, as the irritation of a cord or the brachial plexus being stretched between the anterior scalenus muscle and the projecting tip of a cervical rib, then this cause should be removed. This will usually relieve the vasoconstriction secondary to it. However, when the cause cannot be removed, as microscopic fibrosis which has followed the repair of the ravishes of trauma, and when the vasomotor disturbances threaten the viability or the function of the extremity, then some form of sympathectomy is advisable. We have not yet been able to subdivide this group accurately enough or to apply sufficiently precise tests to determine preoperatively the effect of each of the procedures at our command. So the choice of the procedure to be employed is still largely empirical. In general it can be stated that periarterial sympathectomy is limited in its usefulness to the group characterized chiefly by pain but if vasomotor functions are to be influenced more than temporarily, then this procedure is of no avail and we must resort to ganglionectomy, alcohol injection, or actual division of the peripheral nerves.

One of the most interesting chapters in the recent development of sympathetic surgery has been connected with the attempt through it to control essential and malignant hypertension. Dr. Wetherell has today discussed these developments and I will confine my remarks on this subject to the orientation of its present status in the field of sympathetic surgery. Today the attempt to control hypertension by any of the various sympathetic interventions proposed is distinctly in the phase of clinical research. The results have been sufficiently encouraging to warrant the undertaking of such operations when the patient's family understand and accept the experimental nature of the procedure. At present, however, we must definitely classify the attack in this field as insufficiently tested, not yet of defi-

nately established value. The majority of patients show distinct improvement in symptoms, some of them showing dramatic reductions in their blood pressure as well as improvement in their general condition which may be maintained for months. However, there is a discouraging tendency for a gradual climb back to the preoperative level of hypertension even among those patients where it is proved by pharmacological tests that the constricted arteries are still dilatable. We are gradually accumulating evidence strongly suggesting that the fundamental arterial spasm of essential and malignant hypertension is influenced by some vasospastic agency other than extrinsic sympathetic vasoconstriction and other than adrenalin secretion. Naturally we immediately think in this connection of the only well-known vasospastic endocrine hormone other than adrenalin, namely that from the posterior pituitary. Whether further investigation will bear out the suspicion that this agent is involved and whether, if it is, additional surgical or

chemical methods for its control can be elaborated, only the future can tell.

Summary

The sympathetic nervous system is one of the most recent additions to surgery. The work in this field to date has consisted largely in an exploration of the possibilities offered. However, in the last decade enough experience has accumulated to warrant certain preliminary deductions. Surgical interruption of the sympathetic nervous pathways can be classified in three groups on the basis of these results, (1) those of definite benefit, (2) those that have proved unsatisfactory, (3) those not yet sufficiently tested to establish their worth. Neither an uncritical enthusiasm nor a hopeless pessimism concerning the benefits of intervention on the sympathetic nervous system is warranted by the established facts. The results attained in the various systems to date are reviewed.

STRONG MEMORIAL HOSPITAL

DOCTORS STUDYING POISON GAS

Many seem to think that another World War is looming on the horizon, and all hope that we shall not be drawn in. If we should be, how many physicians know what to do in case of poison gas attacks? The British doctors are realizing their ignorance on this subject, and are preparing to learn everything possible about it. A recent speaker, addressing a meeting of secretaries of the British Medical Association, as reported in the *A M A Journal*, said that as a result of long thought and much deliberation with various representative medical bodies, a scheme has been evolved.

Ten physicians had been selected and had attended or were actually attending the Civil Anti-Gas School in Gloucestershire. These ten would be centered in various places throughout the country closely connected with medical schools, because one of their duties would be to train medical students. They would also instruct the practicing physician. For this purpose the machinery of the British Medical Association had been freely offered and gratefully accepted.

The air raids precaution department intended to place some forty or fifty trained

units in various localities. Each unit would draw classes from an area of from 10 to 15 miles. Then the unit would be shifted to another locality and the procedure repeated. Nothing less than twelve hours' instruction was likely to be sufficient. Major Blackmore suggested six periods of two hours each, one hour of theoretical and one hour of practical instruction. Whether that instruction took place six days in succession or one day a week or a fortnight was a matter of local arrangement.

The government would provide the instructors and equipment free of charge. The maximum in a class should be sixty, but from the point of view of practical instruction from thirty to thirty-five was a better number. A series of handbooks on the subject had been published by the government, of which one was clinical and designed for the medical profession. Gas masks would be available during the course.

Mobile gas chambers, of which some thirty-five or forty were already scattered about the country, would be available for instruction. The response to the scheme had been overwhelming and it would be necessary to increase the number of medical instructors.

ENTRANCE OF IODIZED OIL INTO THE CIRCULATORY SYSTEM DURING UTEROGRAPHY

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The first x-ray visualization of the uterine cavity was performed by Cary¹ in 1914. He injected a solution of collargol into the uterus for this purpose. Owing to the numerous and painful reactions, the use of collargol never became popular. Scores of other opaque solutions were recommended by different authors in substitution of collargol. Kennedy² in 1923 recommended the use of a twenty per cent sodium bromide solution. William and Reynolds³ in 1925 suggested the use of barium sulphate and bismuth. Almost every heavy metal in some combination was given a trial and was used as a contrast medium in hystero-graphy. Such combinations were sodium bromide, sodium iodide, bromides in oil, bromionized oil, thorium, etc. Yet all these means failed to popularize the use and value of salpingo-uterography. Heuser⁴ introduced iodized oil in 1928. The use of iodized oil for x-ray purposes was pioneered by Sicard and Forestier⁵ in 1921. They used it first for the roentgenological diagnosis in body cavities, especially the skull. They were also able to prove convincingly the harmlessness of this oil.

Heuser's method gave the uterography the proper stimulus. Within a short time his procedure was adopted and generally used. At the present time, utero-salpingography with iodized oil as contrast medium has a well-established place in gynecology, especially in the diagnosis of female sterility. Its limitations and contraindications are well-established. Severe accidents are rare and easily avoidable. Only minor sequelae have been noted and reported such as peritoneal irritations, exacerbations of dormant inflammatory processes in the pelvis, iodism due to the absorption of the iodine ingredient in the injected oil, and the entrance of the injected iodized oil into the circulatory system from the uterus.

It is the latter accident which may occur during salpingo-uterography that will be discussed.

Taking into consideration the uterine blood supply with its large venous plexus the possibility of such an accident is easily conceivable although its occurrence was rarely reported until recently. This fact may be explained in one of two ways: *first*, that the x-ray films registering this accident had not been properly interpreted, and *second*, in the majority of cases in which this accident occurred, no ill effects were noted. Judging from the frequency with which this accident was observed in the Sterility Clinic of the Harlem Hospital one may presume that the entrance of iodized oil into the circulatory system is a fairly frequent accident during utero-salpingography. As these accidents are not always harmless and in some very rare instances may even cause death to the patient and as they are avoidable, their proper description and interpretation is recommendable.

One such case was published by the author⁶ in 1935. Brief histories of three additional cases are given herewith.

CASE 1. W. M. J., colored, twenty-one years old, was admitted in August 1930. Her complaints were sterility and sexual frigidity. She was married four years. She had one induced abortion of three months gestation in 1925. Same paternity as in the present conjugation. Menstruation onset at the age of fourteen, regular every twenty-eight days, duration three to four days, not painful. Amount of blood scanty. No previous illness or operation.

Gynecological examination revealed normal external genitalia, vagina roomy. Uterus small, ante-flected, freely movable. Right ovary cystic, left ovary and tube normal.

Tubal insufflation in April 1931 revealed patent tubes at sixty mm hg pressure. Two months later the patient had an attack of acute salpingitis. Tubal insufflation in July 1931 with 200 mm hg pressure was unsuccessful. Another at-

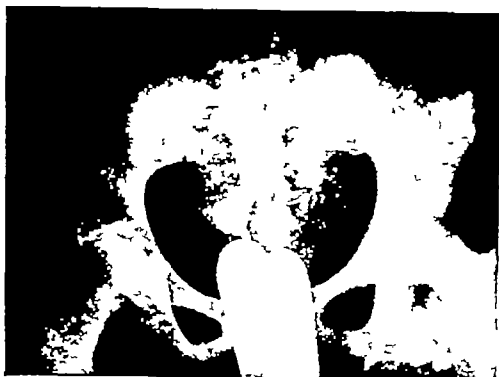


Fig 1 Immediate picture. Left hydrosalpinx. Oil entering the circulatory system at the right tubal cornu



Fig 2 Twenty-four hours after Fig 1 Remnants of oil in the left tube.



Fig 3 Immediate picture. Normal uterine cavity. Left isthmic block. Right tube patent for a distance of a $\frac{1}{4}$ "

tack of salpingitis in January 1932 left the patient with a permanently palpable right pyosalpinx, two-six cm in diameter. In June 1932, eight cubic cm of iodized oil was injected into the uterus for uterographic purposes. The time of this procedure took place three days after the cessation of the last period. Moderate pressure was used.

Immediate picture (Fig 1) showed the cavity of the uterus well-filled, the right tube closed at its isthmic end. The left tube closed at the fimbriated end (hydrosalpinx). Besides these findings, at the right cornu not far from the tip of the inserted cannula a triangularly shaped area was noted where the oil made its entrance into the uterine circulatory system. The twenty-four-hour picture (Fig 2) showed remnants of the oil in the left hydrosalpinx, none in the free abdominal cavity and none on the site of the described triangular area. The patient had no unusual symptoms during or after the hystero-graphy.

CASE 2 S G, thirty-three years old, white. Came under observation in May 1931. Her chief complaint was sterility of seven years duration. She was married eleven years. She had had four induced abortions of six to eight weeks gestations. No full term child. Last curettage in 1924. She started to menstruate at the age of twelve. Menses every twenty-eight days, regular, lasting two to three days, not painful. Amount of blood scanty.

Gynecological examination revealed normal external genitalia, roomy vagina, ante-flected uterus, normal in size, moveable, adnexa negative.

Insufflation test in May 1931 at 200 mm hg pressure revealed tubal occlusion. A second insufflation test in June 1931 with 220 mm hg pressure and with atropin administration gave the same negative result. In September, fourteen days after the end of the last period, eight c.c. of iodized oil were injected into the uterus under moderate pressure. The immediate picture showed (Fig 3) a normal uterine cavity, left tube not visualized, the right tube patent only for a distance of a quarter of an inch at its uterine end. No oil in the peritoneal cavity. A second iodized oil injection was made on November 17 with ten c.c. of oil injected under increased pressure. (Last menstruation November 12-15). During the injection the patient complained of some abdominal pain but showed no other ill effects. This abdominal pain disappeared promptly upon relaxation of the pressure. The immediate x-ray pictures (Fig 4) revealed a large uterine cavity, both tubes segmentally filled with oil to their fimbriated

ends. Beside these findings the body of the uterus, especially the fundus showed the penetration of oil into the myometrium. The circulatory system in the right parametrium was filled with oil making the right vena ovarica also visible. The twenty-four-hour picture (Fig 5) showed remnants of oil in the tubes and in the uterine cavity but none in the circulatory system. Subsequently several insufflation tests have been made but no tubal patency was obtained.

CASE 3 G D, twenty-three years old, colored. Admitted in May 1935. Her chief complaints were sterility and occasional abdominal pain. She was married five years. Nulli gravida. Menstruation, onset at the age of fifteen. Regular every twenty-eight days. Duration four-five days, not painful. Amount scanty. She had an appendectomy in 1926. Gynecological examination revealed normal external genitalia, vagina roomy, cervix centrally located, cone-shaped, pin point external os. Uterus small, anteverted, moveable. Adnexa negative.

Two insufflation tests performed in May and June with 200 mm hg pressure revealed tubal occlusion.

On July 3, 1935, eight c.c. of iodized oil was injected under moderate pressure into the uterus. Date of last menstruation was June 27, 1935. The immediate picture (Fig 6) revealed normal uterine cavity with isthmic block of the tubes. The entire venous system of the uterus filled with oil, especially the left vena ovarica. The twenty-four-hour picture (Fig 7) revealed no oil in the pelvis. No ill effects were noted during and after this injection. On July 31 two days after cessation of the menstruation and twenty-eight days after the previous salpingography, ten c.c. of iodized oil were injected with the cannula of the same length and in the same position. The immediate picture (Fig 8) showed almost identical shadows as viewed on the previous occasion. Normal uterine cavity, isthmic block of the tubes, venous, circulatory system filled with oil, both venae ovaricae visible. Films taken five minutes after the injection of the oil showed similar pictures with the oil more advanced in the veins making the two venae ovaricae visible almost in their entire length. Several pictures were taken at ten minute intervals from the lungs but they were all negative and no trace of oil emboli could be detected. The twenty-four-hour picture revealed the complete disappearance of the oil from the pelvis. The patient did not have any ill effects on this occasion either.



Fig 4 Immediate picture. Large uterine cavity. Tubes segmentally filled, not patent. Oil in the body of the uterus. Left vena ovarica visible.

A third hystero-uterography was undertaken in November 1935. This time in the third week of the menstruation cycle. The cannula was shortened to prevent injury of the uterine mucosa. Two c.c. of oil was injected at four intervals and pictures taken in every phase. Until the sixth c.c., the injection required moderate pressure. In injecting the last two c.c. the pressure had to be increased considerably causing some abdominal discomfort to the patient. The two c.c. picture (Fig 9) showed an insufficient filling of the uterus with isthmic block of the tubes. In the four c.c. picture (Fig



Fig 5 Twenty-four hour picture. Remnants of oil in the tubes. None in the veins.



Fig 6 Immediate picture. Normal uterine cavity Isthmical block of the tubes Oil in the circulatory system Both venae ovaricae visible



Fig 7 Twenty-four hour picture. No oil visible in the pelvis

10) the uterine cavity was better filled but still incompletely with isthmic block of the tubes The six c.c picture (Fig 11) showed the entire cavity well-filled, and the oil entering the tubes to the fimbriated ends, but oil in the peritoneal cavity The eight c.c picture (Fig 12) showed the effects of the increased pressure, uterine cavity rounded out on the fundus, and the internal os dilated facilitating the filling of the cervical canal with oil No oil was visible in the circulatory system The twenty-four-hour picture (Fig 13) showed the pelvis free from any oil remnants

Twenty-one similar cases have been reported in the literature to date In these as in several other publications, references were made toward the existence of other cases

The first five cases were reported in 1929 by Pujol, Brull, Vanrell, and Riera⁷ All five cases have been young women complaining of sterility In each case moderate pressure was used The quantity of oil is not given One case had uterus septus, one had a uterine polyp, one case had metropathus hemorrhagica, and two cases had normal uteri In all cases, the tubes were found closed Except for some hemoptoe of short duration in one case, no ill effects have been noted As far as the cause is concerned, these authors ascribe the accident to (a) lesion of the uterine mucosa or (b) excessive pressure.

The next two cases were published by Witwer, Cushman, and Leucutia⁸ in 1930 They used only five c.c of oil with moderate pressure in each case, yet the oil entered the circulatory system In both cases, the injection was repeated ten days later



Fig 8 Immediate picture. Normal uterine cavity Isthmical block of the tubes Oil again filling the veins



Fig 9 Two c.c. oil injected Insufficient filling of the uterine cavity Tubes not visualized

and the oil again entered the circulatory system. These facts induced the authors to assume that an increased pathologic permeability of the receiving sinuses facilitated the entrance of the oil. They observed no ill effects either.

E. Gajzago's⁹ case stands unique with its result. The patient in this case died within nine hours after the injection of the oil. She was sixty years old, white, para six, complaining of a six weeks metrorrhagia. The gynecological examination revealed a fist-sized fibromatous uterus with cervical decubitus, and prolapsed vagina. To ascertain the exact location of the fibroma whether it was intramural or submucous, eight c.c. of oil was injected under eighty mm hg pressure with fluoroscopic visualization. The picture showed the presence of a submucous fibrom. Shortly after the injection the patient collapsed and became



Fig. 12 Eight c.c. oil injected. Uterine cavity rounded out at the fundus. Oil in the cervical canal. Tubes still closed at the fibrinated ends.



Fig. 10 Four c.c. oil injected. Uterine cavity still insufficiently filled. Oil entering tubes.



Fig. 12 Twenty-four-hour picture. Pelvis free from oil remnants.



Fig. 11 Six c.c. oil injected. Uterine cavity well-filled. Tubes filled with oil to the fibrinated end. No oil in the peritoneal cavity.

unconscious. Heart stimulants somewhat improved her condition for a few hours, but expired at the end of the ninth hour. The autopsy and the microscopic examination revealed the presence of oil emboli in the lungs, heart, kidneys, spleen, liver and in the capillary system of the hypophysis. The intrauterine fibrom was covered with dilated veins of which one showed the site of the injury caused by the inserted cannula. Gajzago advises that the amount of oil should be limited to three to five c.c. and the pressure to sixty-eighty mm hg.

Amos, Wong, Wu and Chien¹⁰ reported five cases in 1932. Their patients were all young Chinese women complaining of sterility. Three of them had infantile uterus. Two had normal genitalia organs. The hysterographies were made during the first

postmenstrual week. In all of their cases, obturated tubes were found. No ill effects were noted. They emphasized the harmlessness of the accident despite the fact that in their animal experiments they were able to kill one and one-half to two kilogram rabbits with an intravenous injection of one c.c. of oil

R. Solal¹² had one case in 1932. His patient was a nulli gravida with a small infantile uterus. She was injected on the fifth postmenstrual day. The pressure was measured and steadily maintained under 200 mm. hg. Bicornuate uterus with closed tubes was found. Four weeks later on the fourth postmenstrual day, the injection was repeated. The same pictures were obtained with the oil again entering the circulatory system. There were no sequelae.

D. Zacharin's¹³ case in 1933 had also an infantile uterus. The injection was performed on the seventh day after the cessation of the last menses. A small uterine cavity was visualized with patency of the right tube. The pictures which were taken ten minutes after the injection of the oil showed that the oil completely disappeared from the circulatory system of the pelvis. The patient had some cough during the procedure but no other noteworthy ill effects.

Portes and Beclere¹⁴ also in 1933, reported one case. Their patient was a young woman complaining of sterility. She had a previous gynecological operation during which a bilateral salpingectomy and unilateral corphoretomy were performed. These authors used 300 mm. hg. pressure under fluoroscopy. Their patient had moderate fever of one day duration, nothing unusual was noted thereafter.

Kilroe and Hellman¹⁵ reported their case in 1933. The pictures showed bilateral patency of the tubes. A repetition of the procedure ten days later gave the same results with the oil again visible in the circulatory system. They adhered to the theory that this was due to a pathological permeability of the circulatory system.

Coventry¹⁶ in 1934 had one case in which the tubes were also closed. His patient had chills, nausea, and rapid respiration of ten minutes duration but no other ill effects. Pictures taken ten minutes after the injection showed the oil disappeared from the pelvic circulatory system completely.

Meaker¹⁷ injected eleven c.c. of oil under 300 mm. hg. pressure. No ill effects were experienced in this case.

Torres¹⁸ had one case. A bicornuate uterus was injected. Normal uterine cavity was visualized, both tubes closed at their uterine ends. No ill effects noted.

P. Porcher¹⁹ in 1935 injected gradually $1\frac{1}{2}$ - $2\frac{1}{2}$ - $3\frac{1}{2}$ c.c. of oil into an infantile uterus. He took x-ray pictures in every phase. While at the beginning of the procedure, nothing unusual was noted, at the $3\frac{1}{2}$ c.c. phase he observed that the oil entered the uterine circulatory system. No ill effects were observed.

The author's case⁴ was a thirty-five year old nulli para who had a previous salpingectomy and appendectomy. Eight c.c. of oil were injected under moderate pressure on the third day after the cessation of the last period. Normal uterine cavity was visualized with patent right tube and oil in the venous system, making the venae ovaricae visible. No ill effects were noted. Several consecutive hystero-graphies were done on this patient, each time the procedure done in the third week of the menstrual cycle. Result: no oil entered the circulatory system.

Conclusions

In analyzing these twenty-four cases, it should be emphasized that except in one peculiar case the ill effects in all other instances have been of a negligible character, described as chills, fevers, coughs, and hemoptysis of short durations. It seems that something in the uterus acts as a strainer retarding the progress of the intravasated oil and disperses it to a degree sufficient to render the accident practically harmless. In Gajzago's case, a veritable intravenous injection of oil took place, hence the fatal outcome. The dispersing and straining action of the uterus plays a major role in safeguarding the patient from oil emboli.

Sicard and Forestier¹⁹ were able to inject into the human cubital vein four c.c. of iodized oil with safety, causing by this action only a slight cough to the patient. They were also able to follow the progress of the injected oil into the lungs, and the disappearance of the oil in the lungs within ten minutes.

Age, race, previous pregnancy, and tubal patency seem to play a minor part in producing this accident. Infantile and small uteri or fibromatous uteri are facilitating factors.

The diagnosis of the intravasation during hystero-graphy is made only by proper reading and interpretation of the immediate and delayed pictures. In the im-

mediate pictures besides the usual designs of the uterine cavity and tubes, sharply demarcated additional visualizations can be observed to which the ascending shadow of the *venae ovaricae* is very often added. Oil in the free peritoneal cavity had indefinite margins. In the delayed pictures, even if taken within fifteen minutes after the injection, there is complete disappearance of the oil from the circulatory system. This disappearance of the oil makes the diagnosis conclusive.

As far as the etiology is concerned, three explanations have been advanced by the different authors: (1) Excessive pressure. (2) Pathological permeability of the circulatory system. (3) Injuries to the uterine mucosa.

1 Excessive pressure as etiological factor could be discarded on the ground that cases with patent tubes have been intravasated, in addition almost every author emphasized the moderate and very often measured pressure which was used during the hystero-graphy.

2 Pathological permeability of the circulatory system is also a very improbable cause of this accident. The author in his experimental cases was able to avoid or repeat the accident *ad libitum*, by changing the time of the hystero-graphies. The oil escaped into the circulatory system when the injection was made immediately after cessation of the menstruation and vice-versa, the oil did not enter the circulatory system if the injection was placed on the third week of the menstruation cycle. If such a condition as pathological permeability exists, the oil should have entered the circulatory system each time the hystero-graphy was done.

3 Injuries to the uterine mucosa. Sampson²⁰ in 1918 and later Beclere²¹ were able to fill the uterine circulatory system with opaque solutions in operative and autopsy specimens via the uterine cavity whenever the intactness of the uterine mucosa was disrupted by physiological bleedings or by curettage. The postmenstrual and post-hemorrhagic uterine mucosa seem to have a greater vulnerability and the receiving venous sinuses of the submucosa an increased penetrability, and these conditions are the principal factors which facilitate the entrance of the injected iodized oil into the circulatory system of the uterus. Small and infantile uteri being shorter than normal, are easier to injure.

The time of the hystero-graphies in the clinic of the Harlem Hospital was routinely placed on the first week after cessation of the period with the idea that the injections should not interfere with the arrival of the new born ovum. The frequency with which the intravasation was observed with this routine coupled with the above described experiments caused the routine to be changed so that the hystero-graphy takes place during the third week of the menstrual cycle. Thus at least ten to fourteen days time is given to the uterine mucosa for its repair.

The quantity of the oil is limited to six-eight c.c. The length of the cannula adequately shortened to the length of the uterine cavity. Moderate pressure is used and interrupted pictures at two, four, six, and eight c.c. are taken. It is expected by this method that a better and more accurate diagnosis may be made of the existing pelvic conditions and the occurrence of the described accident will be practically eliminated.

Summary

1 The history of three cases with reproductions of the x-ray pictures are presented in which the injected oil entered the circulatory system of the uterus.

2 Twenty-one such cases have been reported previously in the literature.

3 Except in one case where exitus took place in all other cases, the sequelae have been of a negligible character.

4 The cause of the phenomenon presumably rests in the vulnerability of the uterine mucosa in the postmenstrual and posthemorrhagic stages and in the penetrability of the receiving sinuses.

5 Hystero-graphies should be placed on the tenth to fourteenth postmenstrual or posthemorrhagic day to avoid this accident.

6 The amount of oil should be limited from six to eight c.c.

7 Interrupted and delayed pictures taken one hour after the injection are of great value in making an accurate diagnosis.

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(See next page for references)

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SENSITIVITY TO EXTERNAL IRRITANTS IN INDUSTRY

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Of prime importance in the prophylaxis and treatment of industrial dermatitis is knowledge of the factors which predispose workers to sensitivity to external irritants

The defense mechanism of the skin against external irritants consists of the cornified cells of the outermost layer and of the secretions of the glands of the skin. The cornified cells are insoluble in water and alcohol and will withstand the action of even fairly strong acids but are attacked by alkalis and sulphides. The perspiration acts as a diluent of irritants which are water soluble and the sebaceous secretions, consisting of cholesterol and liquid waxes, form a protective coating against water soluble irritants. The pigment of the skin also acts as a protective factor against certain skin irritants. The perspiration and the sebaceous matter may, however, under certain conditions act as aids to irritants on the skin.

The vulnerable portions of the skin are the openings of ducts and hair follicles through which certain chemical compounds, especially those which are fat soluble, may easily enter. Thinning or breaks in the cornified layer of the epithelium also act as portals of entry for external irritants.

All matters affecting the defense mechanism and the vulnerable portions of the skin play roles in sensitivity to external irritants. The first of these factors we will consider is race.

It is well-known in industry that the negro is less susceptible to the action of skin irritants than the white man. In such occupations as work on grinders and driers in dye factories, where there is exposure to irritating dust and irritant dyes, many industrial concerns will employ only negroes because by actual experience they have found them to be less sensitive

to skin irritation. Different types of skin even in the Caucasian Race differ in sensitivity to external irritants. Many factories will not employ those with thin, blond skins in occupations where they come in contact with potential skin irritants. Workers having greasy, oily, thick skins withstand the action of such fat solvents as soaps, turpentine, naphtha, benzol, trichlorethylene, and carbon tetrachloride better than those with dry skins. On the other hand, in occupations where oils, greases or waxes are apt to soil the clothing, as for instance, in oil refineries, machine shops, garages, etc., we have observed that those with much hair on the arms and legs and with excessive sebaceous secretion, are more likely to develop acne-like lesions and folliculitis.

In a certain glass factory, where an outbreak of folliculitis occurred among workers whose clothes became saturated with oil, it was noted that the most severe cases occurred among those workers with the most hair on the legs and arms and that the smooth-skinned ones escaped entirely.

In a study of skin hazards among workers with chlorinated naphthalenes and diphenyls, it was found that while all the workers who were exposed for a length of time developed comedones and acne-like lesions, the worst cases occurred among men with dark, swarthy, oily skins, who were in the acne age. The older men, especially those with fair skins, had very few or no pustules at all, but simply yellowish non-inflammatory comedones or cysts.

Various portions of the skin of the same individual differ in susceptibility to external irritants. We have found in our studies that the inner surface of the forearm and the upper arm where the

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THE CAMERA IN MEDICAL PRACTICE

Many physicians are camera enthusiasts. Most photographic clubs number many doctors in their membership and the work exhibited by some is professional in its technic. However, few doctors think of utilizing photography in their daily work. There are many advantages in doing so, remarks the *Medical World*.

No description can equal in telling force the actual picture of a lesion. Case records become of far greater value when before and after photographs are attached for the doctor's own benefit and to show the patient in certain circumstances. Often a doctor likes to delve into his records for the preparation of a medical paper and such photographs can be used for the making of lantern slides thereby enhancing his reputation as an exact observer and causing him to be called upon to address medical groups. There is a certain amount of protection to the doctor in keeping good photographic records. They could be the means of winning a malpractice suit, and none of us is exempt from this contingency.

The equipment necessary for medical photography consists of a camera with a good and comparatively rapid lens, a steady tripod and a suitable lighting unit. There are many cameras on the market made especially for the purpose. One recently introduced is mounted in front of a reflector with the shutter and flash-light bulb synchronized, the latter working from a battery. Arms extend from the apparatus and are placed against the patient to regulate the distance

The resulting negative is of lantern-slide size. It is not essential to have a special, and probably expensive, camera for the purpose, however. A moderately priced camera, providing its lens is sufficiently rapid, will answer just as well. There must be sufficient light, of course. A single reflector with a 500-watt projection bulb or photoflood light will be found most convenient. The photoflash bulbs mentioned above are very handy but prove expensive when a great deal of work must be done. The best size of negative is the $3\frac{3}{4}'' \times 4\frac{1}{4}''$ since lantern slides can be made directly from it and because it is more economical than larger sizes. If larger pictures are wanted, enlargements can be made at moderate cost.

The best type of camera is the one that uses plates or film packs, since this permits the negative to be developed individually and gives greater latitude in time exposures. The kind of film used is an item of importance. Panchromatic film, being sensitive to reds, makes the finest medical pictures but is very sensitivity to red gives an added problem in development, for it must be loaded in the dark and then must be desensitized without the usual red light of the dark room before actual development is started. The doctor who does his own developing will not find this a great problem but if he sends his films out for developing he must be sure that his photographer understands that he is handling panchromatic film.

PEOPLE ARE HEALTHIER AND HAPPIER

When President Charles Gordon Heyd, of the A M A visited Rochester in November to address the doctors there, he assured the reporters that America is headed

for happiness. As they reported him "Why? It's simple. When people are healthy, they are happy—life is better. And people are growing healthier each year."

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The defense mechanism of the skin against external irritants consists of the cornified cells of the outermost layer and of the secretions of the glands of the skin. The cornified cells are insoluble in water and alcohol and will withstand the action of even fairly strong acids but are attacked by alkalis and sulphides. The perspiration acts as a diluent of irritants which are water soluble and the sebaceous secretions, consisting of cholesterol and liquid waxes, form a protective coating against the skin also acts as a protective factor against certain skin irritants. The perspiration and the sebaceous matter may, however, under certain conditions act as aids to irritants on the skin.

The vulnerable portions of the skin are the openings of ducts and hair follicles through which certain chemical compounds, especially those which are fat soluble, may easily enter. Thinning or breaks in the cornified layer of the epithelium also act as portals of entry for external irritants.

All matters affecting the defense mechanism and the vulnerable portions of the skin play roles in sensitivity to external irritants. The first of these factors we will consider is race.

It is well-known in industry that the negro is less susceptible to the action of skin irritants than the white man. In such occupations as work on grinders and driers in dye factories, where there is exposure to irritating dust and irritant dyes, many industrial concerns will employ only negroes because by actual experience they have found them to be less sensitive

to skin irritation. Different types of skin even in the Caucasian Race differ in sensitivity to external irritants. Many factories will not employ those with thin blond skins in occupations where they come in contact with potential skin irritants. Workers having greasy, oily, thick skins withstand the action of such fat solvents as soaps, turpentine, naphtha, benzol, trichlorethylene, and carbon tetrachloride better than those with dry skins. On the other hand, in occupations where oils, greases or waxes are apt to soil the clothing, as for instance, in oil refineries, machine shops, garages, etc., we have observed that those with much hair on the arms and legs and with excessive sebaceous secretion, are more likely to develop acne-like lesions and folliculitis.

In a certain glass factory, where an outbreak of folliculitis occurred among workers whose clothes became saturated with oil, it was noted that the most severe cases occurred among those workers with the most hair on the legs and arms and that the smooth-skinned ones escaped entirely.

In a study of skin hazards among workers with chlorinated naphthalenes and diphenyls, it was found that while all the workers who were exposed for a length of time developed comedones and acne-like lesions, the worst cases occurred among men with dark, swarthy, oily skins, who were in the acne age. The older men, especially those with fair skins, had very few or no pustules at all, but simply yellowish non-inflammatory comedones or cysts.

Various portions of the skin of the same individual differ in susceptibility to external irritants. We have found in our studies that the inner surface of the forearm and the upper arm where the

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THE CAMERA IN MEDICAL PRACTICE

Many physicians are camera enthusiasts. Most photographic clubs number many doctors in their membership and the work exhibited by some is professional in its technic. However, few doctors think of utilizing photography in their daily work. There are many advantages in doing so, remarks the *Medical World*.

No description can equal in telling force the actual picture of a lesion. Case records become of far greater value when before and after photographs are attached for the doctor's own benefit and to show the patient in certain circumstances. Often a doctor likes to delve into his records for the preparation of a medical paper and such photographs can be used for the making of lantern slides thereby enhancing his reputation as an exact observer and causing him to be called upon to address medical groups. There is a certain amount of protection to the doctor in keeping good photographic records. They could be the means of winning a malpractice suit, and none of us is exempt from this contingency.

The equipment necessary for medical photography consists of a camera with a good and comparatively rapid lens, a steady tripod and a suitable lighting unit. There are many cameras on the market made especially for the purpose. One recently introduced is mounted in front of a reflector with the shutter and flash-light bulb synchronized, the latter working from a battery. Arms extend from the apparatus and are placed against the patient to regulate the distance

The resulting negative is of lantern-slide size. It is not essential to have a special, and probably expensive, camera for the purpose, however. A moderately priced camera, providing its lens is sufficiently rapid, will answer just as well. There must be sufficient light, of course. A single reflector with a 500-watt projection bulb or photoflood light will be found most convenient. The photoflash bulbs mentioned above are very handy but prove expensive when a great deal of work must be done. The best size of negative is the $3\frac{1}{4}'' \times 4\frac{1}{4}''$ since lantern slides can be made directly from it and because it is more economical than larger sizes. If larger pictures are wanted, enlargements can be made at moderate cost.

The best type of camera is the one that uses plates or film packs, since this permits the negative to be developed individually and gives greater latitude in time exposures. The kind of film used is an item of importance. Panchromatic film, being sensitive to reds, makes the finest medical pictures but is very sensitive to red gives an added problem in development, for it must be loaded in the dark and then must be desensitized without the usual red light of the dark room before actual development is started. The doctor who does his own developing will not find this a great problem but if he sends his films out for developing he must be sure that his photographer understands that he is handling panchromatic film.

PEOPLE ARE HEALTHIER AND HAPPIER

When President Charles Gordon Heyd, of the A M A visited Rochester in November to address the doctors there, he assured the reporters that America is headed

for happiness. As they reported him "Why? It's simple. When people are healthy, they are happy—life is better. And people are growing healthier each year."

SENSITIVITY TO EXTERNAL IRRITANTS IN INDUSTRY

LOUIS SCHWARTZ, M D , *New York City*

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Of prime importance in the prophylaxis and treatment of industrial dermatitis is knowledge of the factors which predispose workers to sensitivity to external irritants

The defense mechanism of the skin against external irritants consists of the cornified cells of the outermost layer and of the secretions of the glands of the skin. The cornified cells are insoluble in water and alcohol and will withstand the action of even fairly strong acids but are attacked by alkalis and sulphides. The perspiration acts as a diluent of irritants which are water soluble and the sebaceous secretions, consisting of cholesterol and liquid waxes, form a protective coating against water soluble irritants. The pigment of the skin also acts as a protective factor against certain skin irritants. The perspiration and the sebaceous matter may, however, under certain conditions act as aids to irritants on the skin.

The vulnerable portions of the skin are the openings of ducts and hair follicles through which certain chemical compounds, especially those which are fat soluble, may easily enter. Thinning or breaks in the cornified layer of the epithelium also act as portals of entry for external irritants.

All matters affecting the defense mechanism and the vulnerable portions of the skin play roles in sensitivity to external irritants. The first of these factors we will consider is race.

It is well-known in industry that the negro is less susceptible to the action of skin irritants than the white man. In such occupations as work on grinders and driers in dye factories, where there is exposure to irritating dust and irritant dyes, many industrial concerns will employ only negroes because by actual experience they have found them to be less sensitive

to skin irritation. Different types of skin even in the Caucasian Race differ in sensitivity to external irritants. Many factories will not employ those with thin, blond skins in occupations where they come in contact with potential skin irritants. Workers having greasy, oily, thick skins withstand the action of such fat solvents as soaps, turpentine, naphtha, benzol, trichlorethylene, and carbon tetrachloride better than those with dry skins. On the other hand, in occupations where oils, greases or waxes are apt to soil the clothing, as for instance, in oil refineries, machine shops, garages, etc., we have observed that those with much hair on the arms and legs and with excessive sebaceous secretion, are more likely to develop acne-like lesions and folliculitis.

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In a study of skin hazards among workers with chlorinated naphthalenes and diphenyls, it was found that while all the workers who were exposed for a length of time developed comedones and acne-like lesions, the worst cases occurred among men with dark, swarthy, oily skins, who were in the acne age. The older men, especially those with fair skins, had very few or no pustules at all, but simply yellowish non-inflammatory comedones or cysts.

Various portions of the skin of the same individual differ in susceptibility to external irritants. We have found in our studies that the inner surface of the forearm and the upper arm where the

skin is comparatively thin, were more often affected by occupational dermatitis and were more sensitive to patch tests than, for instance, the skin of the back. We also noted that the palms are very rarely affected by industrial dermatitis, although they are more exposed than other parts of the skin.

While the perspiration normally is a protective agent against external irritants because it dilutes those irritants which are already in solution, yet we noted that workers who perspire excessively are more likely to develop dermatitis from solid substances which require moisture in order to make them irritants, as for instance, calcium oxide which in the presence of moisture becomes slaked lime (calcium hydroxide), also substances, such as sodium carbonate or soda ash, which will only irritate when they are in solution.

A substance in order to affect the skin must wet it and will act on it either by a chemical combination or by extracting moisture or fat from the skin. That means that a substance in order to affect the skin must be more or less soluble or miscible in the secretions of the skin.

Excessive perspiration combined with friction will also macerate the skin and will thus make it less resistant to the action of external irritants.

The pH of the perspiration is of importance in that it affects the solution of irritants on the skin. It has been shown by Talbert and Rosen that the pH of perspiration varies in different individuals, and at different times in the same individual, anywhere from 4.5 to 8—a difference from marked acidity to alkalinity. In a factory manufacturing calcium cyanamide, a fertilizer and a source of commercial ammonia, it was noted that nearly all of the workers affected with dermatitis from this material had an alkaline perspiration as tested with litmus paper in the axilla. One explanation for this may be that the alkaline lime which caused the irritation in these workers was neutralized by those having an acid perspiration. The diet of the worker also influences the pH of perspiration and is in other ways a factor in sensitivity to industrial dermatitis.

Mayer and Sulzberger,¹⁰ in 1931, showed that diet influences sensitization in guinea pigs.

T. Saito⁷ has shown that the sensitivity of the skin of rabbits to croton oil was increased when they had been rendered acidotic by a diet of oats or by per oral administration of hydrochloric acid, or by the subcutaneous administration of a solution of sodium oxalate. He noted that cutaneous sensitivity in rabbits was also increased by rendering them alkalotic by means of intravenous administration of sodium bicarbonate. However, the sensitivity of the skin was reduced even below normal when hydrochloric acid was administered to a rabbit which had been previously rendered alkalotic or when a solution of sodium bicarbonate was administered to a rabbit which had been previously rendered acidotic. He also noted fairly constant changes in the relative proportions of the electrolytes of the skin accompanying the changes in the intensity of the response of the skin to external irritation. That is, he noted changes in the relative proportions of calcium, magnesium, potassium, and sodium in the skin.

In states of heightened sensitivity there was a high calcium-potassium ratio and an increase in the total weight of the calcium, whereas in states of lower sensitivity the reverse was observed. He suggests that nonspecific desensitization might be sought in the rapid reversal of the disturbed acid-base equilibrium in states of heightened sensitivity of the skin.

In performing patch tests, we have taken into account the fact that there are variations from time to time in the pH of the perspiration of the worker, which may make him sensitive to an external irritant at one time and not at another. We have prepared a stock fluid approximating the perspiration in composition and having the following formula:

Sodium chloride	3
Sodium sulphate	1
Urea	2
Lactic acid	2
Olein	2
Stearin	2
Distilled water	1000

We moisten the skin at the site of the patch test, or the material with which we are patching with this synthetic perspiration. If negative results are obtained, a drop or two of acetic acid is added to a

portion of the stock of the synthetic perspiration in order to make it more acid and a drop or two of ammonia is added to another portion of the perspiration in order to make it more alkaline, and the tests are repeated using these solutions to wet either the skin or the material with which we are patching. This procedure has sometimes resulted in positive patch tests under one or the other of the patches. Control patches with these solutions are always performed. We used this procedure for the first time when we studied dermatitis from synthetic resins and we found that in many instances where negative patch tests had resulted from ordinary patches, we obtained positive reactions when the resin was moistened with the acid synthetic perspiration.

The stearin and olein in this fluid are really not necessary because they do not readily disperse in the fluid and hence do not have the same protective and solvent action as the sebaceous and fat secretions of the skin. The fatty and sebaceous secretions of the skin are evenly coated over the surface and they are also in a liquid state. This liquid state of the fatty and sebaceous secretions is apt to make them solvents for fat soluble chemicals coming in contact with the skin and thus cause them to irritate the skin. For instance, in an outbreak of dermatitis occurring among the wearers of certain wrist watch straps which were dyed with amido-azo-toluene hydrochloride, a fat soluble dye, the most severe reactions from wearing these straps and from patch tests with the dye, occurred on two young dark Italian girls who had oily skins.

We have made a list of substances which we have used as patch tests in our various investigations. In this list we give the concentrations of the substances used and the length of time they were allowed to remain on the skin without causing reactions on controls and yet causing reactions on some workers who were exposed to the substances and had dermatitis. These concentrations are not minimum or maximum. In industry, patches were made with the chemicals in exactly the same form in which the workers came in contact with them in the course of their occupations. Many of the chemicals therefore, were applied in the solid state and as many of them are

insoluble in normal perspiration, they caused no reactions on controls. Had many of these water insoluble chemicals been applied in suitable solvents, they would have caused reactions on the controls.

To this list is appended a list of substances and concentrations compiled by Rudolph Mayer, which when used as patch tests on healthy normal skins for twenty-four hours, result in no reaction. If a reaction results after a twenty-four hour period, or if after a longer period of time a reaction develops, then the skin is hypersensitive to these substances.

Age

Age seems to have an influence on sensitivity to external irritants. Most of the workers affected with acute industrial dermatitis are young and new workers. This may be because they have not become immune or hardened to the chemicals, or it may be because they are less careful in handling chemicals. On the other hand, the chronic eczematoid types of industrial dermatitis usually occur in workers of middle age and beyond.

Women are very often irritated by substances in industry with which men usually work with impunity. A woman will notice the slightest irritation of her skin, whereas most men do not.

Season of the Year

Occupational dermatitis is more prevalent in warm weather when little clothing is worn and contact with skin irritants is more likely to occur. Excessive perspiration is also more apt to occur in warm weather.

The presence of other skin diseases, especially of the itching type where scratching tends to rub in any irritant which may be deposited on the skin, also predisposes to contact dermatitis.

Aside from the thinning and breaks of the horny epithelium caused by these diseases, it has been noted that those workers suffering with seborrhea and mycotic infections are more prone to develop industrial dermatitis than those who do not suffer from these conditions.

Cleanliness

This is a very important factor in sensitivity to external irritant. Cleanliness

of the environment, or in other words, clean work rooms, clean floors, clean walls, clean machines and the air kept free from irritating fumes, vapors and dusts, will diminish the sensitivity of workers to industrial dermatitis. Personal cleanliness is of equal importance. The daily changing to clean underclothes and work clothes, cleansing shower baths immediately after work is finished so as to remove potential irritants from the skin, the immediate washing away of accidental splashes of corrosive substances, washing of the hands and cleaning under the nails before eating, as well as sanitary eating places—all are important factors in the prevention of sensitivity to industrial irritants.

In some instances the wearing of clothes saturated with chemicals with which the worker comes in contact during his employment will cause dermatitis in his home. I saw a case where the wife and child of a worker in Halowax had contracted a severe acne on the face, shoulders, and thighs because they came in contact with the dirty work clothes which the worker wore home from the shop and with the dirty underclothes in which he worked and slept.

Allergy

R Prosser White¹ states that the number of well-found instances of sensitivity directly resulting from occupation is almost negligible. He states that this fact stands out prominently when contrasted with the hundreds of chemical substances manipulated by workers daily. Most of these chemicals are harmless to workers under normal conditions but may be injurious to some workers under different conditions. Many cases seemingly due to allergy can be explained by changes in working conditions or changes in the skin of the worker. During the first few years of the existence of the Office of Dermatoses Investigations of the Public Health Service, we took personal and family histories of allergy of all cases of industrial dermatoses which we saw and we were unable to tie up with the cases of dermatitis any such allergic conditions as hay fever, asthma, and eruption of the skin supposedly due to eating such foods as strawberries, fish, tomatoes, etc. We

found no greater preponderance of allergic conditions in the personal or family histories of those affected with industrial dermatitis than in those who were not affected. However, we did find that a very large percentage of our cases of industrial dermatitis had active mycotic infections either of the interdigital spaces of the toes, as evidenced by scaling and cracking or vesicles, or mycotic infections of the groin and other parts of the body. In fact, it has often been difficult and sometimes impossible to differentiate between the lesions of a phytid and a contact dermatitis. While a positive patch test shows a sensitivity of the portion of the skin on which the test is performed to the substances with which the person is patched, a negative patch test is not conclusive proof that the dermatitis was not caused by the substance with which the patch test was performed because the patch does not simulate working conditions and because the condition of the patient at the time the dermatitis was contracted may not have been the same as at the time when the patch test was performed.

Although Bloch found that a sufficient concentration of the poison of *Primula obconica* will produce dermatitis in all people, yet the fact that there is a specific hypersensitivity of certain individuals to the action of many substances in industry cannot be denied. I have seen cases where the mere presence in the same room with dinitro chloro benzol, or with nitroso dimethyl aniline, has produced pruritus in a hypersensitive individual. I also have seen a chemist so sensitive to formaldehyde vapors that when he held his forearm over an open bottle of formalin, one could see the erythema develop on the exposed skin in less than a minute. That this hypersensitivity can be acquired by continued exposure to certain substances is also a fact. The case as cited above developed an allergy after years of exposure. This sensitization may be induced through channels other than the skin. It may occur through the respiratory or gastrointestinal tracts.

The nitro and nitroso compounds are well-known among chemists to be sensitizers. How sensitization to nonprotein substances is brought about has been ex-

plained by Landstiner. He showed that substances unable by themselves to produce antibodies can do so when linked to a true antigen, such as a foreign protein. Parenteral injection of such mixtures gives rise after a latent period to antibodies not only to the protein but also to the nonantigenic substances.

Haxthausen² produced skin allergy to mercury, chromium, and formaldehyde by combining them with horse serum and injecting them intracutaneously. He also obtained similar results by combining mercuric chloride with washed cultures of yeast. Out of fifty cases studied he obtained positive patch tests with mercury on four cases of seborrhea and negative ones in the remaining forty-six not having seborrhea. As the result of these experiments Haxthausen advances the theory that the micro-organisms of the skin may play the part of foreign proteins in uniting with the simple chemical compounds to form complex antigens capable of producing antibodies to the simple compounds. Passive transfers in these cases of hypersensitivity to simple compounds have seldom met with success but desensitization to various chemicals has been reported by R. Cranston Low and Bloch. We have actually seen desensitization occurring under working conditions. We have noticed workers who when they first came to work developed a contact dermatitis which finally disappeared if work was continued. The workers themselves are well aware of this fact and call it "becoming hardened." We have noted that this immunity will last a varied length of time in the worker, that is, if he should be laid off from work for a few days and returns, he is still immune, but if he stays away from work for a longer period—a month or more—he very often has to go through the same "hardening" process.

When we consider the fact that by far the large majority of the cases of occupa-

tional dermatitis are caused by substances such as alkalis, acids, corrosive salts, fat solvents, and dehydrators, then we realize that only a small percentage of the cases of industrial dermatitis is due to allergy. This is not the case among the wearers and users of finished products. Here allergy is the most frequent cause of dermatitis because the finished products are harmless to by far the large majority of the population. Furs, dyes, cosmetics, while worn by millions, cause dermatitis in comparatively few. We have found that when patch tests were performed with fur dyes, leather dyes, and hair dyes on individuals suffering from dermatitis as the result of using them, the positive reactions to the patch tests were not so localized as they were in most of the workers suffering from industrial dermatitis. In the users of these finished products, the reactions from the patch tests often spread diffusely from the site of the patch and sometimes reactions appeared in distant parts of the body and even became generalized, producing elevation of temperature and systemic symptoms, while in industry by far the largest percentage of patch tests performed in cases of industrial dermatitis caused localized reactions only.

Conclusion

Bearing in mind the above factors in sensitivity to external skin irritants, the dermatologist can better treat industrial dermatitis and the industrial physician can, by selecting suitable persons for the various occupations in which there are skin hazards, and by advising proper safety precautions, lessen the occurrence of industrial dermatitis in the United States and save much suffering as well as a considerable portion of the four million dollars which is the estimated annual cost of industrial dermatitis in the United States.

15 PINE ST

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List of Substances and Dilutions and Length of Time They Were Allowed to Remain On the Normal Skin in the Form of a Patch Test Without Causing Reactions But They Did Cause Reactions on Individuals Hypersensitive to Them

LIST COMPILED BY LOUIS SCHWARTZ, SENIOR SURGEON, U.S.P.H.S

Wearing Apparel

Moisten with perspiration, apply to skin, and leave on for as long as five days

Japanese Silk	Acetate Rayon
Italian Silk	Furs
Yellow Silk	Cotton
Wild Silk	Wool
Viscose Rayon	Leather

Hair

Acids

Moisten a piece of gauze and leave on for twenty-four hours

Hydrochloric Acid	1% sol in water
Sulphuric Acid	1% sol in water
Formic Acid	1% sol in water
Acetic Acid	3% sol in water
Oxalic Acid	5% sol in water
Phenol	2% sol in water
Cresol	1% sol in water

Alkalis

Moisten a piece of gauze and leave on for twenty-four hours

Sodium Hydrate	½ of 1% sol in water
Potassium Hydrate	½ of 1% sol in water
Barium Hydrate	½ of 1% sol in water
Calcium Hydrate	½ of 1% sol in water
Ammonia	2% in water of a saturated sol
Calcium Carbonate	3% sol in water
Sodium Carbonate	3% sol in water
Potassium carbonate	3% sol in water
Sodium Meta Silicate	2% sol in water
Tri Sodium Phosphate	2% sol in water

Chemicals

*Moisten solids with perspiration
Leave on for twenty-four hours*

Urea (powdered)	Pure, moistened with perspiration
Formalin	10% of 40 Volume aqueous sol
Sodium Bichromate	3% aqueous sol
Potassium Bichromate	3% aqueous sol
Sodium Sulphide	1% aqueous sol
Calcium Sulphide	1% aqueous sol
Potassium Permanganate	1% aqueous sol
Amm Fluoride	½ of 1% aqueous sol
Calc. Fluoride	½ of 1% aqueous sol
Hydrogen Peroxide	Pure
Zinc Peroxide	Pure Powder
Zinc Oxide	Pure Powder
Barium Sulphate	Pure Powder

Solvents

Moisten a piece of gauze and leave on for twenty-four hours

Furfural	Pure
Pine Oil	Pure
Di-ethylene-glycol	Pure
Acetone	Pure

Trichlor-ethylene	50% in olive oil
Ethylene Di-Chloride	50% in olive oil
Carbon Tetrachloride	50% in olive oil
Kerosene	50% in olive oil
Gasoline	50% in olive oil
Turpentine	50% in olive oil
Benzol	50% in olive oil
Toluol	50% in olive oil
Xylol	50% in olive oil
Naphtha	50% in olive oil
Terpineol	Pure
Fenchyl Alcohol	Pure

Moisten a piece of gauze

Petroleum Products

Leave on for twenty-four hours

Tar	Pure
Asphalt	Pure
Pitch	Pure
Mineral Oil	Pure

Aniline Dyes

Moisten solids with perspiration and leave on for twenty-four hours

Paper Dyes	Pure Powder or Paste
Silk Dyes	
Wool Dyes	
Cotton Dyes	
Rayon Dyes	
Leather Dyes	

Organic Pigments

Moisten pure powder with perspiration and leave on for twenty-four hours

Fur and Hair Dyes

Leave on for twenty-four hours

Para Phenylene Diamine	3% aqueous sol
Para Amido Phenol	3% aqueous sol
Para Ammino-Diphenyl-Amine	3% aqueous sol
Pyrogallol	3% aqueous sol
Logwood Extract	10% aqueous sol
Chestnut Extract	10% aqueous sol
Fustic or Yellow Wood	Pure
Brazil Wood or Red Wood	Pure
Quercitron	Pure
Cutch	Pure
Turmeric	Pure

Powdered and moistened with perspiration

Dye Intermediates

Moisten solids with perspiration and leave on for twenty-four hours

Phenyl Glycine	Pure
Para nitro benzoic acid	Pure
Phenyl Alpha Naphthylamine	Pure
Mono benzyl para amino phenol	Pure
Meta Toluylene diamine	Pure
Anthracene	Pure
Benzidine	Pure
Diamisidine	Pure
Benzanthrone	Pure
Anthraquinone	Pure
Di Methyl Amine	Pure
Amino Azo Toluene	Pure

Beta Naphthol	10% in Olive oil
Mischler's Hydrol	5% in Alcohol sol.
Nitroso di-ethyl-aniline	1% in Alcohol sol
Di-nitro-chlor-benzol	½ of 1% in Alc sol

Rubber*Moisten with perspiration*

Pale crepe	Pure	leave on 5 days
Darker crepe	Pure	leave on 3 days
Smoked sheet	Pure	leave on 2 days
South American para	Pure	leave on 2 days
African wild rubber		leave on 2 days
Balata		leave on 2 days
Gutta Siac		leave on 2 days
Latex	Pure	leave on 5 days

Latex—containing ammonium hydroxide to preserve it	Pure	leave on 24 hours
Mineral rubber	Pure	leave on 48 hours

Rubber Accelerators

Moisten with perspiration and leave on for twenty-four hours

Guanidines	Pure
Thioureas	Pure
Salts of dithio acids	Pure
Thiuram sulphides	Pure
Mercaptans	Pure
Hexamethylene-tetramine	Pure
Aldehyde amines	Pure
Para-nitroso-dimethyl-aniline	2% in Alcohol sol.

Rubber Anti-Oxidants

Moisten with perspiration and leave on for twenty-four hours

Alpha naphthylamine	} Pure
Phenyl-beta-naphthylamine	
Sym di-beta-naphthyl-paraphenylene diamine	
Di-tolylamines	

Explosives

Leave on for twenty-four hours

Di-nitro-toluol	} Saturated alcohol sol.
Tri-nitro-toluol	
Tetryl	Saturated sol in ether
Fulminate of Mercury	} Pure on gauze moistened with persp
Lead Azide	
Lead Styphnate	
Sensol	
Smokeless Powder	

Paints and Varnishes

Leave on for twenty-four hours

Pure paint or varnish on gauze—allow to dry, then moisten with perspiration and apply as a patch

Photographic Developers

Leave on for twenty-four hours

Metal	} 5% aqueous solution
Amidol	

Soaps

Saturate a piece of gauze with solution and leave on for twenty-four hours

White Castile Soap	3% solution
Other non-medicated, non-perfumed soaps	2% solution in water
Medicated or Perfumed soaps	1% sol in water

Resins

Leave on for twenty-four hours

Olibanum	} Pure Powder on gauze moistened with perspiration
Rosin	
Copal	
Damar	
Cumaron	
Phenol-formaldehyde (Bakelite)	
Urea-formaldehyde (Beetle & Plaskon)	
Phthalic anhydride-glycerine (Glyptal)	
Vinyl resins	
Ester gums	

Waxes

Leave on for twenty-four hours

Beeswax	} Pure
Ceresin	
Paraffin	
Spermaceti	
Chlorinated Naphthalenes and Diphenyls	

Insecticides

Leave on for twenty-four hours

Copper cyanide	} Pure dry Powder
Arsenous trioxide As ₂ O ₃	
Calcium Arsenate	} moistened with perspiration
Lead Arsenate	
Sod. Fluoride	½ of 1% aqueous sol
Sod Fluoro Silicate	½ of 1% aqueous sol.
Ethyl mercury chloride	} ½ of 1% aq sol.
Ethyl mercury phosphate	
Hydroxymercuricresol	
Hydroxymercurinitrophenol	
Hydroxymercurichlorophenol	} Pure powder moistened with perspiration
Pyrethrum	
"Fht"	25% solution in White Mineral Oil

Essential Oils

Leave on for twenty-four hours

Perfume Oils	1% in alcohol sol
Flavoring Oils	2% in Olive Oil

Sulphonated Oils

Saturate piece of gauze and leave on for twenty-four hours

Sulphonated Olive Oil	} Pure
Sulphonated Coconut Oil	
Sulphonated Castor Oil	

Plants

Leave on for twenty-four hours

Oak	} Pure—Powdered, or finely divided, moistened with perspiration
Cedar	
Spruce	
Satinwood	
Rosewood	
Coca bola	
Boxwood	
Teak	
Brazilian Walnut	
Redwood	
Cinnamon	

Flowers

Leave on for twenty-four hours

Chrysanthemum	Fresh flower
Pyrethrum Flowers	Dried flower

Discussion

DR. HERMAN GOODMAN, *New York City*—It has often been said that there is nothing new under the sun. We take pride in the recent flood of interest in well being of workmen. The program of this session of our society reflects that interest. Our own section and the section on Industrial Medicine and Surgery has papers on industrial skin disease. It surprised me and it may surprise you to learn that the founder of industrial hygiene and sanitation for workmen lived more than 200 years ago and that Ramazzini recognized the primary basis of modern industrial hazards. Bernardino Ramazzini (1633-1714) established the two main divisions of the causes of dire results in the risks of employment. The first was the deleterious nature of the material which the workman must handle, and the second, the strange, improper position of the body required in certain occupations.

In a recent volume, I extracted some of the observations made by Ramazzini on diseases of the skin. There was an excellent example in silk handler's disease which Ramazzini described so well that for hundreds of years all other authors on the subject used his description and his concept of the condition. This constant repetition did not ensure accuracy, by the way, or perhaps the conditions of operation changed with the centuries. In a modern study of silk handler's disease of the skin, for example, the antiseptic used in the manufacture of silk filament to prevent the formation of mildew was found to excite the dermatitis.

It may be taken as a general premise that no one person is immune to all irritants. The matter boils down to the old adage: a large dose of poison may overcome in the presence of great resistance, and a small dose overcomes in the presence of slight resistance. We do not know why resistance changes and a person who has worked for years as a silk thrower, for example, should find that it is impossible to continue at work. Of course, it is not impossible that the chemists in the factory have changed the ingredients of their industrial processes. We have noticed the same thing among nurses or surgeons. They do well in one operating room and fail in another because one hospital uses bichloride, let us say, and the second insists on chloride of lime.

The suggestion we offer is that we must not ignore the chemical reactivity of the skin in health, and the assault on that chemical reactivity by the industrial processes. In the first place, and accounting to some degree for the arrangement of an industrial dermatitis, or any dermatitis venenata for that matter, is the presence of active seba-

ceous glands. The partially lysed modified keratin (we cannot honestly speak of sebum as a secretion) from the hair follicles acts in many instances as stimulant to industrial skin disease. Recall the clinical picture of a hand case. Recall that the dorsum of the hand suffers first. It suffers most. The palm is relatively free. Another picture easily recalled is the fact that across the knuckles where neither hair nor hair follicles exist we have an area of skin which is relatively immune to reactivity. It is an area which suffers last and only as part of an extreme instance of industrial irritation of the skin. The palm which is free of sebaceous material, on the same practical and theoretical considerations, rarely is affected early in an instance of industrial skin disease, or in a mild case. The same applies to dermatitis venenata from rhus.

The facts back of these observations go to the credit of Arnold who studied the hydrogen ion concentration of the skin some years back. The use I have made of his observations is the preparation of creams and lotions, for the prevention of industrial skin disease depends upon the premise that the presence of lysed keratin from the hair follicle is an important factor in rendering the skin subject to irritation. Similar usefulness is accorded to the prevention of hair dye dermatitis, for example.

The physician dermatologist must take advantage of these features as well as the most modern advances in technical chemistry as utilized by the commercial pharmaceutical or cosmetic house which is not restrained from incorporating non-official drugs and chemicals into their products advertised and sold as aiding in the prevention of industrial dermatitis. In general and on the whole, the casual product of a written prescription offered by the physician dermatologist has neither the appeal nor the efficacy of the commercial product. The authority of the physician is reduced in consequence. Further invasion of the patents becomes inevitable.

The dermatologist who seeks to alleviate industrial dermatitis must not wait for the patients to develop the skin disease. Insurance companies and personnel managers are not satisfied with remedial measures. It is equally impractical to discharge workers from key positions or force them into the ranks of the unemployed because they develop a skin disease. Society is not ready to support them either. Hence the hope that only those physicians will undertake industrial dermatological studies who are themselves equipped or are willing to cooperate with others so equipped to combat chemicals with chemicals and prevent rather than cure.

CASE REPORT

ERYTHEMA MULTIFORME WITH SEVERE CONSTITUTIONAL SYMPTOMS

HARRIS W CAMPBELL, M D , PHYLLIS S KERR, M D ,
and
EDWARD H MARSH, M D , Dr P H , *White Plains*

Erythema multiforme is a complex usually with only mild if any constitutional reaction. Cases of this disease with severe constitutional symptoms are sufficiently rare to justify reporting.

The patient was a white girl, fifteen years of age, of a family of better than average economic status. She was robust, and apparently had been previously healthy. Her medical history was negative except that about a week before the onset of her present illness she had had what was thought to have been German measles although that diagnosis had not been confirmed by a physician. However, German measles was prevalent in the community and the mother's description of the girl's illness was a fairly accurate picture of that disease.

On April 8 the patient suffered with headache, fever, sore throat, and enlarged and tender cervical glands. When seen by one of us (C) on the afternoon of that day the patient had an extremely red pharynx with small yellowish white patches on both tonsils. Her temperature was 102° F but no eruption was observed. The white blood count was 12,500 with seventy-five per cent polymorphonuclears. During the evening of the same day an erythematous "measly" eruption appeared on the face and upper extremities.

When seen on April 9 the temperature was 104.5° F, she was suffering with repeated chills and complaining bitterly of sore throat. The eruption at this time had not only extended but had changed its character. The lower two-thirds of the face was covered, as were the extremities, the eruption extending down to the backs of the fingers and on the lower extremities involving the dorsum of the toes. On the arms the eruption was slightly less on the flexor than on the extensor surfaces, on the legs both flexor and extensor surfaces seemed equally involved. Whereas earlier in the same day the eruption had been flat it was now papular and edematous. The face was swollen although individual papules could easily be determined. On the extremities the whole

eruption was erythematopapular with a tendency to coalesce with wheal-like lesions resulting. On the breasts and over the sternum were a few small discrete papules, each one surrounded by a narrow pale aureola. The oral mucosa was spotted with red lesions from pinhead to pea size, the throat was very red and edematous. The patient had a rhinitis and a very marked conjunctivitis, both ocular and palpebral, giving her the appearance of one with an acute attack of hay fever. She was also hoarse. Because of the condition of the throat associated with an eruption a diagnosis of atypical scarlet fever was suggested, but this was ruled out by failure of the blanching test and the subsequent clinical course of the disease.

On April 10 the general condition was even more exaggerated. Fever was about the same, the tendency to chills more pronounced, and the mental attitude of the patient much worse. The general picture was that of a very sick girl. The only change in the eruption was an extension to both palms and soles.

On April 11, the temperature was normal, the edema of the face had largely disappeared, the hoarseness was gone, and the conjunctivitis and rhinitis much improved. The eruption had almost disappeared on the legs and feet although still present on the thighs and upper extremities. At this time also it was well-marked on the trunk. The papulo-urticarial character of the eruption was almost entirely lost and it was now merely an intense erythema. On the trunk gyrate configuration was in evidence. The patient was so much better that she was hungry and had no difficulty in swallowing.

The case was quite evidently an allergic phenomenon with the skin picture of erythema multiforme. Whether the original follicular tonsillitis was part of the general picture or whether the succeeding phenomena were allergic responses to a tonsillar infection may be a matter of opinion. In favor of the latter is the early

blood picture typical of an acute infective process. The subsequent oral and late exaggerated pharyngeal manifestations together with the rhinitis and conjunctivitis were unquestionably allergic. No history could be elicited of the ingestion of any drug or food which could reasonably be expected to have caused the condition.

Conclusion

A well-nourished, previously healthy girl fifteen years of age, suffered with an attack of acute follicular tonsillitis associated with a severe general allergic response as a part of which there was evident the dermatological picture of erythema multiforme.

BETWEEN MENTAL HEALTH AND MENTAL DISEASE

B LIBER, M.D., D.R.P.H., New York City

Editorial Note Under this title will appear short summaries of "transition cases" from the service of this author in the New York Polyclinic Medical School and Hospital. The descriptions are not complete clinical studies, but will accentuate situations from the point of view of individual mental hygiene such as crop up in the every day practice of medicine.

A Lingual Story

Who can tell how much truth there is in this woman's story? One part of it seems far-fetched, although my impression, as derived from her personality, is that it is all true. But in psychology this does not matter. Whether it is a dream or a lie it all belongs to the picture. No one can go out of himself in his invention of any story. The material he works with is contained within him. Nor is truthfulness relevant to our present purpose.

One day this patient's mother happened to be suddenly very ill. It was thought that she was dying. So the daughter ran into the street, met a policeman, and asked him to call a hospital ambulance. He first came up to the house, looked the situation over, and then went to the telephone. An intern arrived, examined the old lady and wanted to take her to the hospital. But she refused, and some medicine had to be given to her which improved her acute condition. She remained at home and alive.

About a month later, when our patient, that is the previous patient's daughter, returned late at night from a ball, alone, the above mentioned policeman, stationed in a somewhat dark block, stopped her and asked about her mother's health.

"All right," said the young woman.

"Glad to hear it, but it is all due to me, I saved your mother," replied the guardian of the law.

"How is that?"

"Well, didn't I call the hospital doctor?"

"Yes, and I thank you for that."

"That isn't enough. You must do more than that."

And he, a large and powerful man, dragged this little female rapidly to the most shadowy place, lifted her up and inserted his tongue deeply into her mouth. No mat-

ter how she struggled and tried to turn her head away she could not escape his embrace or his tongue.

He was all excited and did not leave her free until he calmed down. Then she protested and said "Why don't you do that to your wife? I am married and I don't want that sort of thing." To which he answered that it was an honor for her and that he had done the same thing to other women and girls without meeting the slightest opposition.

This may be a figment of this patient's imagination, but it is not an impossible event. After all, policemen have been known to abuse their power and position and this one may have suffered from sexual irregularity which makes only this particular form of gratification acceptable.

But, as this woman herself puts it in her introduction, what about it? What harm has been done to her?

She apparently went home, or rather ran home, slipped into bed at once and said nothing of this occurrence either to her husband or to anyone else. But she was never the same person. A whole year elapsed and during that year she worked out a beautiful psychoneurotic complex.

She had no doubt that now she was suffering from syphilis. Had she not read that this disease may start from the mouth? And did she not have all the symptoms described in the newspaper article?

It all began with a burning of the tongue, the gums, the palate, and continued with a pain in the throat which descended into the chest until now the "entire body" was affected. She was sure to die soon. She observed herself, palpated her body, looked continually into the mirror, and was totally unable to do her housework or to attend to

her husband and child, a girl of eight. She sighed, cried in the day time, and was sleepless at night. She kept on enumerating unceasingly her multiple sufferings in the presence of her child and wanted her sympathy, without, of course, mentioning her secret to her or to anybody in the family.

Finally she went to a physician who examined her "very carefully" and sent her to me with a note about his findings. She did not tell him the first part of her story, the "original sin" and he made no effort to go beyond her superficial complaints.

This medical man was right about the inequality of the patient's pupils. But this condition failed to alarm me, not only because it is sometimes spontaneously changeable and then meaningless, and because it is not always a sign of lues, but also because in this case the left, smaller pupil coincided with opacities present from childhood. As a matter of fact, the patient had but little vision in her left eye.

Her tongue was "abnormal." Yes—and no. She had one of those "chopped" or roughly fissured tongues inelegantly called by the French *langues scrotales*, which are supposed to run in families and are normal with many people. She admitted to have always had it exactly the same way and never to have suffered from it until that fatal, tongue-kissing night. It certainly had nothing to do with syphilis.

Neither the physical examination nor the serological test, done by her first doctor and by myself—not because I regarded it as necessary, but just to satisfy and convince her—showed anything abnormal. The real examination, however, was performed by a mere observation of this patient's behavior of her gestures, her stage-acting. I might say her evidently exaggerated complaints and her insensible anxiety.

But in order to prove the truth of her contentions she sprang a surprise. She dramatically opened the door and brought in her little girl, the presence of whom was unknown to me, saying "Please Doctor, examine her. I am the most unfortunate person, because I have infected her. I really care nothing for myself. I want

you to save my child, although I am afraid it is too late. She is doomed."

One look at the child, a few minutes' conversation with her, revealed the situation.

True, contagion had taken place, but not the one this mother had in mind. Through imitation this eight-year-old girl paraphrased her mother's symptoms entirely. Sometimes she went further and used the exact words and motions and signs and sentimental glances, so carefully studied for a year. She too had lost her appetite, she too was unable to sleep at night. She could neither play, nor run errands, nor go to school. Her tongue and throat and chest were burning "like fire" just like her mother's.

Under Charcot and for many years after him, this would have been a type of hysteria, a term which, together with its companion neurasthenia, has been dethroned or greatly modified.

What was there to do?

At the beginning the condition seemed hopeless. But it yielded surprisingly quickly to treatment, which consisted of a few conversations only. There was a response, a favorable change in the mother, right from the first consultation, even before any explanation was offered. The questioning, the examination, purposely done in such a manner as to change the mother's mind about herself and her girl, already contributed toward a cure. A sincere threat regarding the danger to the child's mind, to her future, expressed with deep persuasion by the doctor, helped. Then a description of the translucent analysis of the patient's make-up and of the mechanism which had brought on her fear. A popular lesson about syphilis showed her how little her condition resembled that of the venereal disease.

Within a short time after the mother was cured the child followed suit and became again the happy, playful, sociable girl she had always been before.

But this patient never wanted to give me the policeman's number, which she said she knew. How significant this fact was I do not know.

611 W 158 St

RAILWAY SURGEONS PICK OFFICERS

These officers were chosen at the forty-sixth annual session of the New York and New England Association of Railway Surgeons at the Waldorf-Astoria Hotel. President, Dr. Francis J. Carr of Buffalo, first

vice-president, Dr. Ford M. Summerville of Oil City, Pa., second vice-president, Dr. Brooks McEuen of Syracuse, secretary, Dr. Raymond G. Perkins of Malone, treasurer, Dr. Harold H. Baker of Rochester.

NEW YORK STATE JOURNAL OF MEDICINE

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EDITORIALS

The Darkening Horizon—Health Insurance

During the recent national campaign, upon the occasion of the dedicatory ceremonies in Jersey City, President Roosevelt took special pains to assure the medical profession that it would have nothing to fear from his re-election, but could rest assured that it would be consulted and its wishes taken under consideration on the question of medical care in devising means to bring about the goal set for the administration in the domain of social security.

Hardly had the excitement of the election subsided than the *New York Herald Tribune*¹ of November 23, carried a story concerning a project for compulsory health insurance, including "cash benefits in disability and invalidity"—ending with the statement that it can all be conducted on a "pay-as-you-go" plan.

We learn that this story was promoted by the Department of Information of the Social Security Board. It was not published as coming from this Department, it was disguised so that it would appear to have a different origin of issue. This disguise was put on so that the medical profession would not feel that "it had been ditched" by Washington

activity just two weeks following the election, and without even the semblance of that consultation and conference which the pre-election statement implied would take place. From information at hand we confidently predict that there will be more and more intense propaganda along the same lines in the near future, coming from diverse points of issue but all originating in the same place.

We strongly resent this appeal to the public in an effort to form public opinion prior to consultation and conference with the medical profession. We do not blame the head of the administration for all the acts of those of its functionaries who, like Mr. Walton Hale Hamilton, have fixed ideas upon the topic at issue.

On the one hand we are in honor bound to defend the high standards of medical care which we have evolved through decades. We have a duty to the general public to see to it that instead of dropping to the level at which it is held in foreign lands, preventive medicine shall not only maintain its high American level, but be developed even further. We have an obligation to the public to keep them from developing into a nation of "medicine bottle users" in lieu of exact diagnosis and expert treatment of their

¹ "Health Insurance Study is Instituted by Security Board," *New York Herald Tribune*, November 23

ills, both acute and chronic. As a profession we have a tradition to maintain, that those who come into our ranks shall come because they carry eager hands to serve suffering, and are not a job-hunting and job-holding fraternity organized to enhance their economic and financial interests. We want nothing whatever to do with the inevitable dirtiness which the demands for "cash benefits" and "disability and invalidism pay" would bring upon us.

On the Washington scene, examination reveals a curious situation. The "socializers" are actively preparing and issuing their propaganda to convince labor in particular and the public in general that *it wants this legislation*.

On the other hand, President Roosevelt desires no new taxes, and so we confidently predict that the bill for compulsory health insurance will be introduced into Congress in the latter part of its next session and will be so phrased that it will take effect only in January, 1938—thus easing the gradation into additional tax burdens!

Until now President Roosevelt has not said one word that he himself is convinced that compulsory health insurance is the answer to the problem of medical care and service to the American people. Nevertheless, many of the agencies in his administration are actively working for its establishment here.

What shall our attitude be when we are consulted? Will it suffice for us to concentrate only upon a defensive position? A positive position is always better than that of a negative defensive attitude. Shall we content ourselves only with efforts to defeat compulsory health insurance because we know its shortcomings? Would it not be better for us to formulate a positive program and concentrate our best efforts to devise some plan or scheme which, while obviating and avoiding all the known disadvantages inherent in compulsory health insurance, would yet be along lines which without sacrifice of intellectual honesty

and accepted high principles of service, we could honorably afford to support.

The *New York Herald Tribune* of December 1, commenting upon the action of the Social Security Board editorially remarks

To save the medical profession and the nation from the application of another European institution, about as well suited to our temper as peace-time conscription, it seems to us that the doctors will have to consider forthwith how medical, nursing and hospital service can be rapidly extended in conformity with the public interest and with their own professional ideals.

We have adopted the principle that the care of the indigent is the care of the community and for this care the doctor should be paid, and we demand that the highest *quality* of medical care be given those below the "comfort level," at a cost within their means. And since the government considers aid to those below the "comfort level" to be within the domain of the goal set for social security, the government should participate in the payment for this care. Upon any scheme containing these principles we could unite because neither the provisions of our own Booth Report nor the ten-point program of the A.M.A. would be violated in any way.

We are not at this time in position to foretell what organized medicine will do. Having in mind the current political situation with its various cross currents we feel that the time is almost upon us when *action* will be required of us positively to shape our policy. In this policy lies the very future of medicine. Now, it is for us to decide whether American medicine will lead the way, or be a reluctant follower in the developments with which the instant situation is pregnant.

Scientific Unity

Professor Henry de Wolf Smyth's recent statement linking Einstein's theory to medicine contains more than a grain

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1. "Health Insurance Study is Instigated by Security Board," *New York Herald Tribune*, November 23

Water-Borne Epidemic of Tularemia

Tularemia, first described by Pearse in 1910, was, two years later, proven to be an infectious disease caused by a specific organism, the *Bacterium tularense*. At first reported in certain circumscribed sections of our country, its prevalence has spread and until recently, the remote etiological factors were bits by the blood-sucking fly *Chrysops discalis*, the rabbit louse, mouse louse, bed-bug and squirrel flea, all of whom ingest the bacterium from the rodents. The handling of infected rabbits has also produced this disease.

Karpoff and Antonoff¹ report an outbreak of tularemia in Siberia wherein the drinking of infected water was found to be the mode for the spread of the infection. Two groups of workers used two different sources of running water for their drinking supply. In one group, no cases of tularemia occurred whereas in the other all the workers became infected. The water that these later drank showed pure cultures of *B. tularense*, and produced characteristic pathological changes when injected into a guinea pig. Some dead water rats were found in the brook used.

The reporters feel that in this epidemic the portals of entry were the tonsils, mouth, and conjunctival mucosa. The disease itself assumed the angnal, typhoid and glandulo-ocular forms. Here, then, is another factor requiring the vigilance of the health authorities, added to their rapidly increasing epidemiological problems.

Lerische, Jung, and Dupertius¹ afford some pertinent observations on the effects of hyperparathyroidism.

Following prolonged and repeated injections of parathyroid extract in animals who were fed an unrestricted diet they found a marked increase in the calcium content of the arteries and the heart. This effect could be obtained only in adolescent rabbits and young rats whose growth and development, incidentally, were retarded to a considerable degree. A significant finding was that, with the continued injections, the calcium in the myocardium returned toward normal while that in the larger arteries remained high and continued so after the administration of parathyroid extract had been stopped.

Disturbances in calcium metabolism have an effect upon the excitability of the nervous system. Laryngismus, infantile convulsions, and spasmophilia result from a decreased secretion of parathyroid hormone. In the work of Lerische et al. evidence is brought forth to indicate that the arterial system is affected when the opposite situation exists. In view of the reported good results obtained in Raynaud's disease following partial removal of the parathyroid glands,² it is not inconceivable that the vasomotor system is likewise influenced in the hyperparathyroid state. More clinical investigation is needed before diagnostic and therapeutic measures will become practical.

CURRENT COMMENT

"HEARD THROUGH THE DIN for state medicine is a constant crackling about the tragic effects of catastrophic illness. True, unexpected sicknesses wreak real havoc yearly on many low-income families. No one gainsays that. Yet their incidence is easily exaggerated.

Nearly 400 typical and geographically-spaced families with an average income of \$2,748 have been studied by the North-

¹ Lerische, R., Jung, A. and Dupertius, S. M. *Presse Medicale* (Paris) 44 1433, 1936.
² Bernheim, A. R. and Garlock, J. H. *Amer Surgerv* 101 1012, 1935.

Experimental Hyperparathyroidism

The regulation of calcium metabolism is the function of the parathyroid bodies. The clinical manifestations of hypoparathyroidism are known to a much greater extent than those found when the parathyroid glands become overactive. The chemical and histological studies of

¹ Karpoff, S. P. and Antonoff, N. I. *J. Bacteriol.* 32 243, 1936.

of truth As the sciences expand, they inevitably overlap, and each must learn to utilize the others' contributions to the general fund of scientific knowledge

Medicine has frequently been a beneficiary of sister sciences, notably physics and chemistry According to Professor Smyth, "Relativity first suggested that matter could be changed into energy and vice versa, an idea that is fundamental to the current studies of nuclear physics which bid fair to have such great practical importance" in the treatment of cancer Research in telephony has synthesized vitamins Meteorological investigation yields valuable information for the treatment of respiratory disease Obviously there is no such thing as scientific isolation, and the world would be the loser if there were

The question that remains is whether physicians on the whole are equipped to utilize the resources of other sciences for the advancement of their own Regrettably enough, the answer cannot be given in an unequivocal positive While physics and chemistry figure in pre-medical and undergraduate medical education, the need for continuous interest in these subjects is not stressed The average practitioner limits his postgraduate studies to his particular field It does not occur to him to turn his attention occasionally to the nonmedical sciences that have contributed so much to medicine

Professional organizations are not wholly free from blame in this respect It is an unusual program that goes beyond strictly medical boundaries for material Similarly with the colleges For the most part subjects like chemistry and physics are taught as distinct bodies of facts instead of being correlated with healing as living, expanding sciences that are continually altering the environment in which medicine operates and the instruments with which it works All in all, this is a suggestive topic for medical educators—both academic and practical—to consider

Significant Criticism

In spite of general approval of the aims of the Federal social security program, the law in its present form continues to evoke severe criticism Many of those who are most warmly in sympathy with the purposes of the act are most outspoken in their strictures They point out that the law makes no provision for the indigent and unemployed, who are most in need of aid, that many workers who will have to pay in the form of higher taxes and living costs are excluded from benefits, and that costs fall too heavily upon the wage-earner

To the profession, these criticisms are highly significant for they are among the most serious objections raised to compulsory health insurance In their way they are encouraging, for they indicate a growing awareness that the costs of governmental benevolence must be defrayed by the people and that, under our present system of concealed taxation, most levies ultimately fall upon the shoulders of the small consumer "Our present taxes," according to J Weston Walch, "eat up 25 per cent of the national income If all our government bills were being paid, they would consume 35 per cent * * * Taxes, to the average American workman today, mean the difference between poverty and sufficiency"

Obligatory prepayment for sickness would create even more problems than unemployment and old age insurance and give added point to the criticisms directed against the latter For one thing, inability to secure medical care for economic reasons is far rarer than unemployment and needy old age For another, this problem is most acute among the indigent, precisely the class for which the compulsory health insurance systems make no provision Other objections are the difficulties of establishing a sound actuarial basis for sickness insurance, the peculiarly complicated administrative methods required and the demoralizing effect on medical service, which is not as easily or casually distributed as cash benefits

Correspondence

[THE JOURNAL reserves the right to print correspondence to its staff in whole or in part unless marked 'private'. All communications must carry the writer's full name and address, which will be omitted on publication if desired. Anonymous letters will be disregarded.]

More Anesthetists

373 Sterling Place,
Brooklyn, N Y

To the Editor

In the November 1 issue of the JOURNAL under "Correspondence" there is a letter of criticism from Dr L F Anderson of Buffalo anent your editorial on nurse anesthetists

I agree largely with your reply to his letter, but I feel that he is correct when he decries the lack of support given to the anesthetics question by the State Society

Why the N Y State Medical Society has been so lax thru all these years in allowing this racket to go on at the expense of the profession is certainly a mystery to me. As the accredited guardian of the rights and prerogatives of its members and the profession at large, I assert that the Society should come out this year definitely and forcibly against permitting an important branch of practice to be handled mainly by nurse technicians, who are not in a position to advance the progress of this specialty

The progress of anesthesia, as you must know, has been so rapid and diversified in the last few years that it should be in the hands of physician anesthetists, and I consider it the manifest duty of the State Society to see that this is brought about as speedily as possible

Yours very truly,

HOWARD T BLAIR, M D

November 21, 1936

Note The activity of the Society depends on the action of its House of Delegates. These voted the introduction of corrective legislation. This is in progress now. Instead of writing

to us about what the Society should be doing, the anesthetists might try an educational campaign to teach hospital executives and directors the need of employing physicians rather than nurses as anesthetists—*Editor*

Do Not Blame the Newspapers

1100 Park Ave.
New York City

To the Editor

The lurid newspaper accounts of the trial of "Dr" Anna Swift before the Court of Special Sessions in New York for furnishing sexual "divertissement" to wealthy patrons by special masseuses do not bring out the fact that it was Anna's status as a licensed physiotherapist which enabled her to establish her own offices. Page 227 of the *University of the State of New York Bulletin* of March 16, 1936, containing the official roster of physicians, osteopaths and licensed physiotherapists, lists Anna Swift under a page heading of "Registered Physicians." Years ago we protested that it is both misleading and unnecessary in the official bulletin for the heading "Registered Physicians" to be continued throughout all its pages. The State Education Department paid no attention to this protest. So do not blame the newspapers when Anna Swift, registered physiotherapist and alleged keeper of a disorderly house becomes publicized as "Dr" Swift.

Incidentally, whence the authority of a physiotherapist, who, according to the law, is himself an agent of the medical profession, to employ assistants and delegate his or her work to them?

RICHARD KOVACS, M D

November 21, 1936

MOTHERS WHO IMPERIL THEIR OWN LIVES

The Maternal Mortality Committee of the Medical Society of the County of Erie reports that the chief dangers to mothers' lives involving the responsibility of the public come from (a) failure of the patient to cooperate with her physician during pregnancy (b) failure of the patient to obtain prenatal care or to realize its importance

or to understand what constitutes a minimum standard of prenatal care (c) danger to mother's life from abortions (at least one-fourth of all maternal deaths in previous surveys were found to be due to abortions) (d) demands painless childbirth at unwarranted risks

western National Life Insurance Company. Major illnesses visit them only once every eleven years and cost an average of but \$280. In other words, out of 572 weekly pay checks, six, or approximately one per cent of them, are lost in the catastrophe. Is there any reason to suppose that such a levy plunges these families into the slough of poverty?"—From *Medical Economics*, November 1936

"ONE OF THE DISTURBING FACTORS of modern life is the habit of discarding individual thought and action, regardless of experience, for thought and action provided and sponsored by groups, associated together along new lines. Nothing is even suspected of having merit unless put forth by some group, especially one with a title that implies a revelation from heaven * * *"—From the *Weekly Roster and Medical Digest*

SAID LORD PONSONBY, sponsor of the euthanasia bill recently *rejected* by the House of Lords in England "I am certain that the time will come when Parliament will have to regulate the matter and I am certain that a measure of this kind will be accepted some day. I am afraid the alliance between prelates of the Church of England and doctors will defeat me, but I think it is not the first time the priesthood and medical men have worked together."

Said the Archbishop of Canterbury "I cannot but think that it is better to leave this difficult and delicate matter in the

hands of the medical profession rather than to drag it into the open and regulate it by legal procedure. In this matter I would trust the judgment and honor of the medical profession."

"IT HAS BEEN SAID that once state medicine got a foothold here, little short of a revolution would uproot it. This is no exaggeration. Take as an object lesson the thousands of people now on relief. They are getting something for nothing. Is it logical to suppose that they will bite the hand that feeds them? * * * The average practitioner does not seek hand-outs from Washington. He recoils from the thought of being *kept*, with all that the word implies. He wants to be left alone to practice independently, to give his best to the profession to which he has dedicated his life * * *"—From the pen of Colonel H. Sheridan Baketel, also in *Medical Economics* of November 1936

ANENT THE PROBLEM OF THE delivery of medical care, *Medical Record* of November 18 states that " * * * The fact is that the medical profession no longer dares to look to the past and to tradition for a solution of this problem. It must rapidly and radically change its social and economic thinking, if it is to remain in the forefront of progress and to help plan an effective medical organization for the future. Otherwise, instead of helping paint this picture, physicians will be fitted into it like parts of a jigsaw * * *"

DOCTORS' LOCK YOUR DOORS

The Doctor's office without attendant without lock and key an open invitation to all who care to enter the delight of petty thieves! exclaims the *Kings County Bulletin*, and adds

One of our members reports the following incident

"A man, evidently aware of the fact that I was not in my office, called some twenty minutes before my office hours and informed the maid who opened the door that he would wait until I arrived. When the maid left the waiting room, the man entered my office, helped himself to a Rochester Castle electric sterilizer and a leather case containing bacterial vaccines (probably would have taken more if something hadn't fright-

ened him) and departed, leaving the front door open (for more thieves to come in). He was about forty years of age, five feet eight inches tall, dark hair, neat appearance and well mannered."

If this "gentleman" should pay a visit to your office, instruct your attendant to detain him and notify the police.

For your own protection, do not leave your office open to the public—For here is another—A doctor enters his office to find a "patient" with a handkerchief over his face. In response to the classic inquiry of "What's the matter with you?" the doctor gets invited to stick 'em up and shell out! He does!

scure and enigmatical and in the end the oracles fell into disuse and the priests who lived in the caves were at last without employment because people ceased to come to them. A new priest appeared, who went out among men teaching them. Mankind followed the new leader who lived among them, partook of their customs, habits, joys, and troubles, and answered their questions before they were asked.

Whither medicine? Where are we going? Why are we going? How are we going? The first three queries I lay in the laps of the bright intellects of medicine. On the last question I submit a few thoughts.

Once there was a large crowd of boys going up a hill. One boy, far behind, was running fast. A bystander asked him, "What's the matter? Why do you have to run so fast?" The boy replied, "I must catch up with the crowd. I am their leader."

It is this type of leadership from which medicine has been and is suffering. Is it not the height of folly to issue edicts to the medical profession assuring them that they are the last court of resort, that their opinion on the interdependence between medicine and the public is final, that their oracular utterances are enduring and eternal? Do not these leaders correspond to the little boy in the rear of the procession?

Rather let us acquire new technics: those of groups dealing with groups. In the process of becoming better known, in coming out of our caves, so to speak, we have need to proceed with care, lest we stumble, for we are treading new ground. We must see that nothing is lost that is still of value in the old tradition, and that the new method does not corrupt the values of the old. To be vocal we must have spokesmen, and they must be the right spokesmen. They must say that which is truly interpretative of us. This done, we have nothing to fear from the term "publicity," anathema as this is and should be, when used for personal aggrandizement.

Many questions have arisen. Perhaps the greatest one has been "Can this thing be done without loss of prestige and dignity on the part of the profession?" This question, I believe, has been answered in the affirmative. In fact it has been demonstrated in New York State, at least, that it can be done to the enhancement of the prestige and dignity of the profession. Certainly we are becoming better known and better understood. We have not lost anything by that, but gained a great deal. The oracle sacrificed everything by remaining

in his cave, he became a suspect because he hid himself and surrounded his function with mystery. People needed leaders they could see, who came and walked with them.

Mistakes have been made in medical economics since the history of medicine has been recorded. They will continue to be made, but reiteration of mistakes is stupid and destroying. Leaders in medical economic thought must have uncompromising vision, fortitude to face the harshest facts, and ability to guide through unknown regions.

But a short time ago our government destroyed many magnificent battleships, because we believed in the word and integrity of other nations. Now, we must replace this navy with another. This mistake cannot be rectified. Each year we accept many graduates in medicine from European universities and license them to practice in the State of New York. Will these nations and these universities reciprocate? Such mistakes are matters of civics. Therefore medical leaders have civic duties. Each year 7500 physicians are graduated into the practice of medicine and only 2500 die. This is a mistake of medical education. Therefore medical leaders have a duty in guiding medical education.

For many years we have had a slogan "militant medicine." This sounds well and always obtains applause. It is similar to the Fourth of July orator whose peroration consists of waving the American flag and praising the constitution. Militant medicine means leadership of the public. It means improvement of our public relations. It means creation of leadership available to other groups than our own.

Too often we have found ourselves leading yes—but the outside group we thought we were leading was sometimes going the other way! For we have been in our cave as to these concerns strictly outside the practice of our art, while others walked and talked with men.

Is not this indeed the "militant medicine" of which we have been hearing so much? Not militant in sham battles, straw men at grips with straw men, but real antagonists on the battlefield of controversial opinion.

For years this change of attitude has only been prevented by a wrong conception of the ethical proscription against advertising which is wholly inapplicable in the circumstances of group activities. The abuses to which the instruments of propaganda have been put have closed our eyes to the values when the method is used in accordance with our ethical principles.

MEDICAL TRENDS

Whither Medicine?

TERRY M. TOWNSEND, M.D., F.A.C.S., *New York City*
Chairman, Committee on Medical Trends,
Medical Society of the State of New York

Medicine is not dependent, neither is it independent. Medicine is interdependent with the public. Without the public there would be no medicine, without medicine, there would be no public.

With a clear understanding of these premises, it is about time that each side stop throwing brickbats at the other. There has never been a full and complete understanding between medicine and the public. The medical man has been so engaged in dealing with the raw stuff of life in all its ungentle profusion that he does not exercise his leadership on the masses in a practical manner. On the other hand, the public has always regarded the physician as one who is content to travel the even tenor of his way, to fraternize with his like, and avoid contacts that are not the obvious ones between physician and patient and not involving him in community responsibility. The physician by instinct, training, and occupation is individually self-reliant, solving each problem as it comes along as an original problem, yet not in an original way. Our habits of thought and action require us to solve these problems by reference to principles, with the insight given by the experience of ourself and others. Within these self-imposed limitations, we are truly free spirits.

We are free because we are disciplined as are no other group of men. The world has yet to learn through bitter experience that the man, group or mob who have freedom without discipline will have discipline imposed upon them from without. It is the human inclination to accept the downhill path.

The query "Whither medicine?" implies "Whence medicine?" for "I have but one lamp by which my feet are guided and that is the lamp of experience. I know no way of judging the future but by the past."

Whence came medicine? From a prehistoric area. As far back as 4000 or 5000 B.C., we have definite knowledge that medicine was practiced in a very practical manner, in conjunction with a liberal mix-

ture of religion and superstition. Even Aesculapian medicine was dedicated to the gods and his daughters Hygeia and Panacea played prominent parts in the faith. It was Hippocrates who discarded mythological gods and taught mere humans to observe disease, learn its manifestations, and apply logical relief. For three hundred years until the death of Galen and his followers, medicine flourished as an art and science. Then came the decline and fall of the great Roman and Grecian civilization and culture; medicine also fell and near died. It required fourteen centuries for medicine to revive and progress. As the social, political and economic tides ran low, so did medicine.

Five centuries is but a tiny period of the world's time, and it may be reasonably accepted that our present culture will not be immediately wiped out. Nevertheless, when, as, and if this decline and fall comes, medicine will fall, but not so low as it did in the fourteen centuries after Galen. If medicine obtains and retains strong leadership, much can be done to prevent its complete abasement and even under the severest blows which culture may sustain, medicine can still hold its prestige.

But medicine, as has been stated, is interdependent with the public. And the public has chosen to take a superficial course in medicine without, at all times, the wisest leadership. Not always, but too often, "health education" has operated as a mere inducement to self-diagnosis. In other respects, of which we are aware, the public has been given erroneous information in the ostensible effort to "educate" them. This is because we have been content to be leaders as individuals of individuals, and have not exercised leadership as a group of other groups. Never have we denied advice or assistance, but have always given it when requested. But we have waited to be requested. Our attitude has been that which Shakespeare describes in the lines—"My name's Sir Oracle and when I open my lips, let no dog bark." History relates that the utterances of the oracles were ob-

Read before the Tompkins County Medical Society, Ithaca, November 19, 1936

scure and enigmatical and in the end the oracles fell into disuse and the priests who lived in the caves were at last without employment because people ceased to come to them. A new priest appeared, who went out among men teaching them. Mankind followed the new leader who lived among them, partook of their customs habits, joys, and troubles, and answered their questions before they were asked.

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The day of mute leadership is gone. The leader of today and tomorrow will be persuasive, he will reach out and ask for the understanding of others, he will never claim exclusive rights to be heard, he will lead by right of his superior reasons. We have nothing to fear in becoming better known.

The method is not so new as we may think. It was mentioned by St. Matthew when he said:

"Neither do men light a candle and put it under a bushel, but on a candlestick, and it giveth a light unto all that are in the house."

Two years ago, men of vision in the Medical Society of the County of New York saw the need for a change in the attitude which had pervaded organized medicine. That organization entrusted to Dr. James F. Rooney and a committee denominated as Committee on Trends in Medical Practice, the setting up of machinery to make organized medicine vocal and persuasive. On January 15, 1935, this committee established a Public Relation Bureau "for the purpose of bringing about a better understanding on the part of the public of the aims and purposes of the medical profession." Mr. Dwight Anderson was selected as director of the bureau and has developed a technic to carry out its purposes. After Dr. Rooney's resignation I was named as the chairman of this committee,

which consists of the chairman of every standing committee of the State Society, and four other members. The personnel at the present time consists of Drs. Groat, Hambrook, Nelms, Farmer, Elliott, Simpson, Kopetzky, Kosmak, and Jewett.

Thus, the committee has the advantage of the advice and assistance of the chairman of all standing committees, together with that of other individuals selected because of certain specific contributions to our work, which they are known to be able to make.

In conclusion, "whither medicine" and "how are we going" depends upon how closely we adhere to the following basic principle: the public needs to be told what are their questions, and they must be told the answers, and they must be persuaded to act in accordance with the answers.

The old method was informative, the new method is persuasive. The old method tended to make the doctor admired and respected. The new method aims to make him also better understood.

The old method tended to differentiate him from the public, to place him on a pedestal or in a cave—aloof. The new method tends to identify him with the public by the very effort of persuading them.

The old method was by way of edict and fiat. The new method is by way of explanation and understanding.

TAKING THE SOUL OUT OF MEDICINE

Those who talk so glibly of making over this profession of ours—this profession rich in traditions, this profession which has attained such noble worth, this profession actuated by kindness and sympathy, this profession whose only passwords are mercy and pity—lose sight of the art of medicine, declared Dr. Maxwell Lick, of Erie, Pa., in his presidential address to his state medical society. They would by a stroke of the pen destroy this almost divine principle, they would reduce to a formula, he said, all these human attributes of kindness, pity, and mercy. They would put the matter on a business basis under the assumption that only scientific medicine need be applied to the sick in order to affect a cure. What an abysmal misunderstanding of the principles involved! What gross injustice and what cruel denial would result to many, many personalities! The art of medicine and its application must remain unchanged. Nothing must make unheard those words so

often expressed by the sick: "Doctor, I'm so glad you have come." There is wrapped up in that one sentence the epitome of the medical art which has existed through the centuries. It is akin to the child who reaches out his hands to his mother and finds solace and understanding in her arms.

The art of medicine has not changed. The passwords of mercy and pity are the same today as in the days of Hippocrates and the physician of the old school. These qualities of the human soul must not die if the art is to exist. Would you have me believe, he asked, that they can be taken over by the politicians and bureaucrats? Would you have me suppose that they can be reduced to a business formula? Would you have me think that they can be turned on and off by a switch? I call you to witness that this can no more be done without debasing the quality than one can stifle the love in the human breast for its Creator without dwarfing the soul.

PNEUMONIA CONTROL PROGRAM

Handbook on the Nursing Care of Pneumonia *

EDWARD S. GODFREY, JR., M.D., *Albany*
Commissioner New York State Department of Health

Foreword

This Handbook has been prepared under the joint auspices of the Committee on Public Health and Medical Education of the Medical Society of the State of New York, the New York State Nurses' Association, the New York State Department of Health, the General Advisory Committee on Pneumonia Control of the New York State Department of Health, and the Nursing Advisory Committee to the Bureau of Pneumonia Control of the New York State Department of Health.

In preparing this Handbook a selection has been made of those medical and nursing aspects of pneumonia with which the nurse should be familiar in order that she may render effective care to her patients and furnish the physician with pertinent information in his absence. An attempt has been made to present the subject in a comprehensive manner in order to make it equally of interest to the nurse practicing in the hospital and in the home.

It is assumed that each nurse will be thoroughly familiar with the technical details of her work in her chosen field, whether it be caring for private patients, hospital, public health, or visiting nursing. Also, no attempt has been made to discuss in detail many of those fundamentals of nursing care with which the graduate nurse is essentially familiar, even though their ap-

plication may be important in the treatment of pneumonia. A few words cannot be substituted for years of sound training, nor can they convey the qualities of personality and of understanding, particularly of the social and psychological aspects of her work, which are equally important to the nurse.

Those interested in further study, either of the subject of pneumonia or of the various broad aspects of nursing, are referred to the section on "Suggestions for Reading from Authoritative Sources," which is appended.

The Division of Public Health Nursing and the Bureau of Pneumonia Control are indebted to the members of the Nursing Advisory Committee and its subcommittee on the preparation of the Handbook for their assistance in collecting and compiling the material herein presented. They are also indebted to numerous individual members of the medical and nursing professions for their careful review of the Handbook in its preliminary stage and valued comments, many of which have been incorporated in the text. To the officials of the Metropolitan Life Insurance Company thanks are due for printing the Handbook, thus making possible its wide distribution.

MARION W. SHEAHAN, R.N.
Director, Division of Public Health Nursing
EDWARD S. ROGERS, M.D.
Director, Bureau of Pneumonia Control

Handbook on the Nursing Care of Pneumonia

It is understood that the nursing care of pneumonia is carried out under the orders of the attending physician and that considerable variation will be encountered between various methods of treatment which may be equally effective. The following discussion,

wherever it encroaches on this field, is intended solely as background material representing in general a conservative view.

Inasmuch as the rationale of nursing care depends on the medical aspects and treatment of the disease, the present review is arranged in such a manner that the medical and nursing aspects are dealt with in sequence under each major heading in order to indicate their interrelationship.

I Definition

Pneumonia is a disease characterized by

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and the
DIVISION OF PUBLIC HEALTH NURSING
1936

inflammation of the lung, high temperature, and toxemia. It is most prevalent in late winter and early spring. It is often fatal.

II Etiology and Prevention

Medical Aspects

A Causative micro-organisms

1. *Pneumococcus* Types I, II, III, or Group IV (including Types IV to XXII) cause the majority of cases of so-called "lobar pneumonia."

2. Other micro-organisms, such as *streptococcus hemolyticus*, *staphylococcus*, *Friedlander's bacillus*, and *influenza bacillus*, are occasionally encountered.

B Communicability There is sufficient evidence to justify the conclusion that pneumococcus pneumonia is a communicable disease.

C Source of infection

1. Respiratory secretions of infected individuals convalescent and healthy carriers.

2. Probable paths of transmission: (a) Direct by droplet infection. (b) Indirect through contaminated articles or dust in contaminated surroundings.

D Predisposing factors It is generally felt that infection resulting in pneumonia is somewhat dependent on the existence of certain predisposing conditions which act through lowering resistance of the host and increasing his susceptibility to this particular type of infection. Specifically these conditions are thought to be such infections as the common cold, grippe, influenza, measles, and whooping cough. The postoperative period, chronic debility, abnormal fatigue, overexposure, chilling, and alcoholism are also generally considered important in this respect.

E Preventive measure (1) Maintenance of bodily resistance through adequate personal hygiene which includes rest, nutrition, exercise and warmth. (2) Elimination of focal infection. (3) Avoidance of predisposing conditions. (4) Protection of individuals with lowered resistance from unnecessary exposure to pneumonia cases or possible carriers.

Nursing Aspects

B and C Communicability and source of infection Communicable disease technic is indicated in handling a pneumonia patient so that spread of infection either by droplet or by contact with respiratory secretions through contaminated articles may be prevented. In this connection the following directions should be observed:

1. Isolate patient in bed and in a room by himself. If this cannot be done, separate the beds as far as possible and place a screen between them or stretch a sheet from headboard to footboard on the side of the bed. If the beds cannot be sufficiently separated, arrange them so as to bring the head of one opposite the foot of the other and then separate them by a screen or a sheet as suggested.

2. Keep all unnecessary persons and articles out of the sickroom at all times.

3. Observe the fundamentals of communicable disease technic with respect to:

(a) Wearing a gown and face mask when caring for patient. The practicability of masks is a matter of controversy. If they are used their value depends largely on the proper technic, to cover both nose and mouth, to avoid contamination of the side worn next to the face and avoid saturation with moisture by frequent changes.

(b) Thorough washing of the hands with soap and water after caring for patient.

(c) Proper care and disposal of respiratory secretions.

(d) Thorough scalding and washing of dishes used by patient.

(e) Thorough scalding and washing in soap and hot water of all bedding and linen used by patient.

(f) Thorough airing and exposure for two to three hours to the strong sun out of doors all articles which cannot be washed.

(g) Proper cleaning, airing, and sunning of the sickroom at termination of illness.

D and E Predisposing factors and preventive measures The nurse, whether employed in public health work or not, has a distinct responsibility, as also has the physician, in the dissemination of sound public health knowledge. Accordingly the nurse can assist in the prevention of pneumonia by teaching:

1. A proper regard for pneumonia as a communicable disease.

2. The dangers of unnecessary exposure to new environments (persons and places where pneumonia germs may be picked up) on the part of individuals suffering from severe colds, grippe, influenza, measles, whooping cough, overfatigue, etc. (Rest in bed not only provides desirable isolation but also constitutes one of the best treatments for such conditions.)

3. The recognition of the dangers of neglecting a cold accompanied by fever, malaise, or other constitutional symptoms. The potential seriousness of these symptoms should be stressed and medical attention advised.

4. The principles of general sound health and hygiene.

III Diagnosis

Medical Aspects

A Clinical The diagnosis can often be made on symptomatology alone—in fact, the very early diagnosis must usually be so made. The symptoms may appear singly or in combination and may vary considerably in intensity. Definite physical signs may be several days in developing. To await these may mean loss of extremely valuable time. The occurrence of any of the following symptoms should arouse the suspicion of pneumonia:

1. Sudden elevation of temperature.

2. Chill.

3. Pain in the chest (or side).

4. Blood tinged or rusty appearing sputum.

B Bacteriological

1. Prompt bacteriological studies are essential to adequate treatment on a scientific basis.

2. Sputum examination. Specimen should be ob-

tained as early as possible and sent to an approved* laboratory for typing.

3 Blood cultures should be taken. These are of importance not only in diagnosis and prognosis but also in determining the course of treatment.

4 In absence of a sputum specimen a throat swab taken during the act of coughing should be sent to the laboratory immediately for culture.

5 The most rapid and efficient diagnosis may be made from sputum. Other methods are likely to be laborious and slow. Therefore every effort should be made to obtain such a specimen since many valuable hours may thus be saved. Strapping application of a chest binder, local heat or codeine as a means of easing pleuritic pain and permitting coughing may facilitate the securing of the specimen.

Nursing Aspects

A Clinical symptoms The significance of a sudden elevation of temperature, a chill, pleurisy, or blood-tinged sputum, even though they be mild, should be thoroughly appreciated. The physician should be informed of their occurrence at once. If no medical attention has been secured, its importance should be explained and such attention obtained without delay. In the meantime, strict rest in bed is essential.

1 Even one or two of these symptoms should arouse the suspicion of pneumonia and make medical attention imperative.

2 The alert nurse may aid in the saving of valuable time by procuring medical attention early.

3 Pending the arrival of the physician, certain of these symptoms may require palliative treatment.

(a) Patient's apprehensions may need to be allayed by appropriate reassurance.

(b) Chill may require treatment. If so, the following measures should be employed:

(1) Use external heat, warm blankets, jackets, stockings, hot water bottles, etc.

(2) Give warm drinks if there is no vomiting.

(3) Take temperature, pulse, and respirations immediately following the chill and again one-half hour later. Take and record these at four-hour intervals at least or more frequently if there is reason to suspect a significant change.

(4) At end of chill remove external applications to avoid unnecessary hyperpyrexia. Change wet clothing. Give alcohol rub if indicated.

(5) Make a careful record of all significant symptoms noted and data obtained.

(c) Some relief from pleurisy may often be obtained by having the patient lie on the affected side, although in an occasional case the opposite position will be found more effective. This depends somewhat on whether the diaphragmatic or thoracic pleura is affected.

B Bacteriological diagnosis 1 Sputum should be secured as soon as possible in anticipation of the physician's request for it. Collect the first specimen possible. Even though it is poor, do not discard it until you have obtained a better one.

(a) A sterile petri dish or a clean wide-mouthed container should be on hand to collect the sputum. It should not contain any disinfectant solution.

(b) Patient should be instructed to cough deeply in order to raise sputum from the bronchial passages. Saliva and postnasal discharges are undesirable. They are of doubtful value and may even be misleading.

(c) If pain prevents deep coughing it may be sufficiently relieved by turning the patient over on his affected side, though more elaborate procedures may be required.

(d) If a specimen is ordered sent to the laboratory it should be plainly labeled with such information as name and address of patient and of physician, date and time of day sputum was collected and kind of examination requested. If there is a delay in sending the specimen to the laboratory, it should be stored in an ice chest.

3 Other bacteriological procedures

(a) Blood culture is usually taken by the physician with the assistance of the nurse, who should be careful to observe the following precautions:

If an alcohol lamp or other flame is available, flame the mouth of the culture flask or bottle immediately before and after the blood is added. Do not attempt to flame cotton plug as this almost always leads to burns, trouble and ultimate contamination of the specimen. Do not use any kind of flame in the same room with oxygen equipment. (See Section VII.)

(b) Throat culture is usually taken by the physician. Taking such a culture from small children will be greatly facilitated if they are first rolled securely in a folded blanket or so-called mummy bandage."

IV Clinical Course

Medical Aspects

A General appearance and condition

1 Face may be flushed and somewhat cyanotic. Lips and nail beds may become cyanotic.

2 Expression is anxious, due to the feeling of insecurity caused by embarrassed respirations.

3 Herpetic vesicles may appear on lips and sometimes elsewhere on the face.

4 Tongue may be heavily furred and is often dry. Sordes accumulate.

5 Nostrils dilate with inspiration.

B Cough and sputum

1 During the acute stage of the disease the cough may be frequent and productive of thick, viscid, blood-tinged sputum which the patient often has difficulty in raising.

(a) Medications usually are directed toward the relief of cough (codeine—rarely morphine) and the loosening of sputum (expectorants).

(b) Sputum usually is heavily laden with causative bacteria.

2 After the crisis the cough is likely to be easier and productive of large amounts of mucopurulent sputum.

C Temperature

1 May rise rapidly after onset to 103° to 104° F. It is usually maintained at a relatively high level with slight remissions during course of acute disease.

2 Is frequently irregular and lower in elderly or debilitated patients.

D Pulse

1 Frequency. Usually varies in direct ratio to the temperature, although the rate rarely exceeds 120 to 130 in favorable cases.

2 Character. Is usually full and bounding but may become small and feeble in cases terminating fatally.

3 Opinion varies about the use of digitalis or other cardiac stimulants.

E Respirations

1 Frequency. Is usually markedly increased, 25 to 40 per minute.

2 Character. Shallow dyspnea may be marked.

F Nature of recovery

1 May occur either by crisis or lysis. The former is somewhat more frequent in lobar pneumonia.

2 Character of crisis:

(a) Usually occurs between fourth to tenth days of illness.

(b) Temperature, pulse and respirations drop rapidly to normal to nearly normal or even to subnormal.

(c) General evidence of toxemia disappears.

(d) Crisis is occasionally accompanied by transient symptoms of shock, i.e. feeble pulse, drop of blood pressure, profuse perspiration.

*In New York State diagnostic laboratories approved by the State Department of Health for sputum typing are widely available. Most of these have arrangements for night and holiday service.

(e) Patient usually falls into a profound natural sleep
 3 Lysis is characterized by a gradual return of temperature to normal or nearly so, over a period of days

Nursing Aspect

A General Nursing Care 1 Rapid pulse, cyanosis, and delirium may require oxygen treatment (See Section VII)

2 Mouth hygiene is important for comfort of patient. It may also be a factor in preventing the extension of infection into adjacent organs, i.e., sinuses, middle ear, mastoid, etc. The mouth should be cleaned as often as necessary to keep mucous membranes clear and moist.

3 Nose should be kept clean and clear to eliminate dangers and discomforts of mouth breathing

4 Maintenance of proper room temperature (66°-70°F) and of humidity (40-60 per cent) is of importance not only to the patient's comfort but also to a healthy condition of the respiratory mucous membranes. Moisture may be more or less automatically regulated when plenty of fresh outdoor air is obtained. However, the room should not be allowed to get too cold or the patient to be exposed to a draught. Artificial devices in the room to supply moisture may be of some help

B Cough and sputum 1 Care and disposal of sputum or other infected material

The following directions should be observed

(a) Sputum cup

(1) Keep the cup easily accessible to the patient
 (2) If metal containers with paper fillers are used clean daily by washing them with soap and hot water. If they are grossly contaminated, sterilize them by boiling for 10 minutes or soaking in 2 per cent compound cresol solution for 20 minutes before washing.
 (3) Remove paper fillers from metal container with forceps and securely wrap them in several layers of paper and burn them. If sputum is copious, a layer of cotton, paper handkerchiefs, or a base of sawdust or sand will help to absorb it.

(b) Provide mouth wipes of paper tissue or old linen or muslin

(1) Hang a paper bag at side of bed, within easy reach of the patient, to receive these when used.
 (2) Wrap bag and contents securely in paper and burn them.

(c) It is desirable to help the patient to use the sputum cup or mouth wipes in order to conserve his strength. If the patient is weak or very ill such assistance is imperative.

(d) Wrap carefully in paper and burn other infected material such as nasal discharges, dressings from ear infections, abscesses or empyema drainage.

(e) Carefully wash the hands after handling infected material or caring for the patient.

(f) When working close to the patient his head should be turned to one side or his mouth lightly covered with paper tissue or cloth to protect attendants from direct cough.

2 A weak or very ill patient should be turned on his side periodically and encouraged to cough and raise sputum. Secretions should not be allowed to accumulate in respiratory passages to the point of causing rattling or "moist breathing." However, it will not always be possible to prevent this.

3 Bedding and linen used by the patient should be cared for as noted in Section II

C Temperature Rectal temperature, pulse, and respirations should be taken and recorded at four-hour intervals unless otherwise ordered, or unless the patient is sleeping.

1 Sudden and marked changes in the temperature should be checked, preferably with a different thermometer.

2 The physician may leave a standing order for sponge baths or alcohol rubs for excessive temperature.

3 A fall in the temperature unaccompanied by a fall in the pulse rate may be an unfavorable sign and should be reported immediately.

D Pulse 1 Should be regular and should not exceed 120 to 130. Readings should be made when the patient is quiet and not after exertion, such as a coughing attack.

2 It is best to count the pulse for at least a full minute to insure accuracy.

3 Any appreciable change in character should be reported.

E Respiration May be embarrassed by pleurisy or by abdominal distention. Orders should be obtained in advance for treatment of these conditions.

2 Patient should not be permitted to accumulate mucus in bronchial passages and should be encouraged to cough and raise sputum at regular intervals.

F Nature of recovery 1 Crisis General care

(a) Keep patient warm and dry
 (b) See that the conditions are favorable for sleep
 (c) Keep careful and complete notes of the patient's condition

2 Bear in mind that crisis or lysis is only the start toward a return to health. Many days requiring skillful care still lie ahead.

V General Treatment

Medical Aspects

A Pleurisy

1 Is present in the majority of cases over area of infection. May persist from one to two or three days.

2 Varies in intensity but is frequently extremely severe.

(a) Is somewhat amenable to chest binder, strapping, codeine or morphine, heat or counter irritants.

(b) Pneumothorax or diathermy are occasionally employed.

3 Is serious because

(a) It wears patient out.

(b) It contributes to anoxemia through embarrassed respirations.

(c) It prevents adequate coughing and bronchial drainage and thus may favor bronchiogenic spread of infection.

B Distention

1 Is generally encountered during height of acute disease with other symptoms of toxemia.

2 May be prevented or somewhat lessened by

(a) Adequate elimination by bowel often secured

by adequate enemas and by adequate fluid intake.

(b) Avoidance of gas forming food

(c) Adequate salt intake (5-10 gm daily may be prescribed)

3 Treatment Prescribed by the physician and subject to much variation. It may include stipes, enemas, colonic irrigation and medication such as hypodermic pituitrin or physostigmine (eserine).

4 Serious because

- (a) It is an index of profound toxemia.
- (b) It causes respiratory embarrassment by pressure upon the diaphragm
- (c) It causes circulatory embarrassment through similar mechanism
- (d) It interferes with rest and adequate fluid intake

C Rest

1 This is of fundamental importance since the patient's entire energy should be conserved for the purpose of combating the infection.

2 Insomnia and restlessness may be controlled by oxygen and appropriate medication, such as barbiturates or other hypnotics

3 Delirium.

(a) Is often due to anoxemia and may be amenable to oxygen treatment.

(b) May require strong sedative and rarely restraint.

(c) Requires constant attendance

D Nutrition

1 Anorexia is usually profound during acute stage of disease.

2 High caloric intake is generally considered unnecessary during acute disease of short duration

3 The diet should be liquid

4 Fluid intake should exceed three liters a day unless there are cardio-renal complications

5 Alcohol is not generally prescribed unless specially indicated

E Elimination

1 Urine

- (a) Output should be closely followed
- (b) Is often scanty and of high specific gravity
- (c) Complete retention is not infrequent.
- (d) Incontinence may occur

2 Bowels

(a) Constipation is frequent.

(1) Usually can be avoided by adequate fluid intake and daily enema.

(2) Laxatives if prescribed preferably should be mild.

(b) Diarrhea and incontinence may occur

3 Skin

Fluid loss through diaphoresis is often excessive. It may be somewhat controlled by adequate salt intake (5-10 gm daily) and by proper room temperature and ventilation

Nursing Aspects

A Pleurisy Orders for treatment should be obtained from the physician. If a binder is ordered, a scultetus (many-tailed) binder will be found most suitable. While awaiting orders, some temporary relief may be obtained by application of local heat and by turning the patient to the position of greatest relative comfort.

B Distention Orders for treatment should be obtained in advance from the physician. The usual procedures are use of a rectal tube (soft and of large caliber), turpentine stupes, enemas of various compositions, and medication

C Rest 1 To provide for the patient the maximum rest compatible with adequate nutrition and elimination is the fundamental purpose toward which all nursing procedures should be directed. This may necessitate the modification of strict routine care. For example, rest is more important to the patient than a bath at a fixed hour

2 Energy of the patient should be conserved by

(a) Anticipating his needs so that he does not have to waste strength reaching for things or trying to attract the nurse's attention

(b) Using a drinking tube or feeding cup to give fluids and all nourishment

(c) Keeping patient in optimal position for comfortable breathing, on side or back with slight elevation by means of a gatch bed or pillows

(d) Assisting patient in turning and moving in bed

(e) Keeping room at optimal temperature and humidity (see Section IV) and keeping patient warm but not overheated

(1) If semi Fowler's position is employed, a flannel cape or nightgale may be useful

(2) Direct draughts on patient should be avoided by placing a screen between the bed and windows or open doors

(f) Excluding all visitors in so far as possible.

3 A delirious patient should, under no circumstances, be left alone

D Nutrition 1 Forced fluid (3-4 liters) will usually be ordered. A definite plan should be formulated for giving these amounts, taking into consideration the importance of rest. Small amounts given rather frequently are preferable to large amounts given less often. A supply of fresh, cool water should always be readily accessible.

2 Diet. Orders for diet should be obtained from the physician. It is usually liquid and may include fruit juice, milk, eggnog, malted milk, etc., which may or may not be re-inforced with lactose. Broth, ginger ale, and weak tea are often given.

E Elimination The nurse should observe the following instructions

1 Urine.

(a) Provide bedpan or urinal for patient.

(b) Keep careful record of daily output

(c) Report failure to void over 12 hour period or evidence of a distended bladder

(1) Patient may have marked retention and yet no conscious desire to void.

(2) Patient should be catheterized as ordered. Surgical aseptic technic should be employed.

2. Bowels

(a) Give enemas as ordered

(b) Provide bedpan for the patient. Do not allow him to sit up

3 Skin

(a) Give cleansing bath daily

(b) Give special care to bony prominences to prevent pressure sores

(c) If excessive perspiration or incontinence occurs bathe and dry the patient and change gown and linen as often as necessary

F Instruction to family Members of patient's family or others assisting with the nursing care should be fully instructed in these technics. Directions should be simple, explicit, and accompanied by demonstrations. Particular emphasis should be given to communicable disease technic, feeding, changing position and bedding, and using the bedpan

*VI. Specific Serum Treatment**Medical Aspects**A Antipneumococcus serum available*

1 New York State Department of Health at present provides Type I antiserum. Other types will probably be available in the future

2 Commercial companies and certain other health departments at present produce antisera for Types I II V VII and VIII

B Technic of administration

1 Serum should be used only in cases properly typed

2 The efficacy of serum treatment varies in direct proportion to the duration of the disease at the time of serum administration. The earlier in the stage of the disease the serum treatment is instituted the more effective it is.

3 Tests for sensitivity to horse serum should be made.

(a) History should be taken for allergic phenomena (hay fever, asthma, angioneurotic edema, urticaria) and for previous serum treatment.

(b) Skin test and eye test for sensitivity to horse serum should be made.

4 Serum should be maintained at body temperature and administered intravenously very slowly.

5 Complete instructions accompany each vial of serum. These should be read carefully by those unfamiliar with the use of serum.

6 Hypodermic syringe containing 1 cc. of 1-1,000 epinephrine solution (adrenalin) should always be kept on hand throughout skin testing and serum administration for treatment of possible severe reactions.

C Serum reactions

1 Acute anaphylactic

(a) Are rarely encountered if proper precautions are observed.

(b) Time of occurrence is usually within the first few seconds or minutes of administration, but an hour may elapse before the reaction takes place.

(c) The manifestations are

(1) Sense of substernal pressure, difficulty in breathing, and cyanosis

(2) Rapid, thready pulse

(3) Abdominal, lumbar, or bladder cramps

(4) Urticaria

(5) Anxiety, restlessness, and sweating

(d) Though rare and usually avoidable, these reactions may be violent and result in death unless proper precautions are observed.

2 Thermal

(a) Time of occurrence is from one half to one hour after injection of serum.

(b) The principal manifestation is a chill of from 15 to 30 minutes' duration, followed by a rapid rise in temperature of short duration.

(c) Are rarely serious but may require heroic measures to reduce hyperpyrexia, since deaths from this cause have been reported. Methods most readily available are exposure of patient by removal of bed clothes, alcohol sponges, ice sponges, or ice enemas.

3 Delayed serum sickness

(a) Time of occurrence is usually from four to 14 days following serum injection.

(b) The manifestations are

(1) Moderate temperature

(2) Urticaria.

(3) Painful and swollen joints.

(4) Painful and swollen glands.

(c) Is usually of two or three days' duration fairly mild (when concentrated and refined serum is used) and amenable to appropriate medication. Never known to be fatal.

D Effects of serum treatment

1 If given early on first or second day it may be expected to

(a) Cause critical fall in temperature, pulse and respirations, and also disappearance of toxic symptoms.

(b) Prevent spread of infection to other lobes.

(c) Sterilize the blood stream.

2 If given on third or fourth day, similar results may be obtained but are less certain.

3 If given after fourth day, its value is very questionable.

4 It may not affect course of resolution unless given early enough to prevent the occurrence of much consolidation.

Nursing Aspects

B *Technic of administration as applied to nurse* 1 The nurse should assist the doctor in every way possible, though the extent of assistance requested will vary widely with individual physicians.

2 Surgical aseptic technic should always be observed.

3 Patient should be kept calm and quiet. Apprehension should be avoided.

4 The assisting nurse should observe the following directions:

(a) Be sure to have a hypodermic syringe with epinephrine (adrenalin) ready for instant use and within easy reach of the physician before he begins either skin tests or serum administration. Epinephrine (adrenalin) that has turned dark or muddy has oxidized and is practically of no value.

(b) During skin or eye tests previous to serum administration, watch the patient to see that he does not rub his arm at the site of injection, or his eye. False readings may result if he does.

(c) Sterilize the syringes and needles. Plain water left in syringes, needles, or tubing will precipitate protein in the serum. To avoid this, rinse with sterile physiological salt solution before using.

(d) In order to maintain serum and salt solution at approximate body temperature

(1) Keep in dish of warm water pending use.

(2) Provide hot water bottle or other means of keeping the serum warm during administration.

(e) During serum administration stand by the patient to

(1) Prevent sudden motion. Patient will often lapse into fitful sleep during serum administration and awaken with start or with coughing spell.

(2) Keep constant close observation of patient's pulse. Report quietly to physician a sudden increase in rate or change in quality. This may be the first indication of a reaction.

(3) Observe patient's color and quality of breathing and report any significant changes.

C *Serum reactions* Doctor's orders for emergency treatment should be obtained in advance. Warm blankets and hot water bottles should be available.

1 Acute anaphylactic (very rare)

(a) If they occur they will usually take place within a few minutes, or before the physician has left the case.

(b) If reactions occur in the absence of the physician, the following emergency treatment should be given:

(1) Administer epinephrine (adrenalin) solution 1-1,000, intramuscularly at once $\frac{1}{2}$ to 1 cc according to severity of reaction. Rubbing and massaging the site of injection will hasten absorption and the desired therapeutic effect.

(2) Send for the physician.

2 Thermal.

(a) Mild reactions of this sort occur in about 5 to 10 per cent of cases. Most frequently they commence in from one half to one hour after serum treatment.

(b) These reactions are not anaphylactic and are seldom serious though always alarming to patient. Epinephrine (adrenalin) is not indicated.

(c) Chill should be treated as outlined in Section III.

(d) Physician should be notified at once.

(e) During subsequent febrile period temperature should be taken every 15 minutes and not allowed to go appreciably above 106° F. It is well to obtain orders for treatment of hyperpyrexia from physician before he leaves.

3 Delayed serum sickness

(a) Patient and family should be reassured.

(b) Symptoms are usually amenable to medication though urticaria may be distressing in severe cases.

(c) Various lotions and external medications may be prescribed.

VII Oxygen Treatment

Medical Aspects

A Indications

1 Anoxemia (reduced oxygen content of the blood) may result from

(a) Respiratory embarrassment due to

(1) Severe pleurisy

(2) Abdominal distention

(3) Accumulation of moisture or consolidation within the lung, which reduces area of functioning alveoli.

- (b) Temporary occlusion of the bronchial passages with mucus
- (c) Circulatory embarrassment

B Objective manifestations indicating oxygen therapy are

- 1 Cyanosis
- 2 Dyspnea with very rapid pulse
- 3 Restlessness and delirium

C Methods of oxygen administration

- 1 Oxygen chamber
- 2 Oxygen tent
- 3 Open top oxygen box
- 4 Nasal catheter or cannula
- 5 Funnel and face masks are unsatisfactory

D Once started, oxygen therapy should not be interrupted until the cause of anoxemia is permanently relieved, except for the shortest possible periods

Nursing Aspects

A Nursing technique 1 A patient receiving oxygen therapy must be constantly watched by a responsible individual

2 Specific detailed information regarding operation and care of the apparatus must be secured. If a tent is used, it should be well tucked in around the patient.

3 If nasal catheters or cannulae are used, the following directions should be observed

(a) Nasal catheters Employ No 10 to No 14 French. Cut off end and make additional openings in the sides. Be careful to smooth edges to avoid irritation. Boil catheters five minutes before use. Moisten about 4 inches with water or mineral oil and insert the catheter gently through the external nares and horizontally along the nasal cavity. When the tip touches the posterior wall of the nasopharynx withdraw the catheter slightly. Fasten it with narrow strips of adhesive tape just back of the nostril and at the temple. Fasten the rubber tubing in place. Two catheters may be employed one in each nostril or one catheter alone if one side of the nose is obstructed or sore. Clean the catheters as often as is necessary to keep them free from obstruction

(b) Metal cannulae Strap to the forehead so that the curved tips of the tubes are just inside the nostrils

(c) Keep the oxygen flow running at the specified volume usually between 3 to 5 liters per minute

4 All oxygen tents, chambers, and boxes of efficient design have cooling units. These will require attention. The optimum temperature range within the tent is 60°-64° F

5 Regulation of oxygen flow No oxygen apparatus, other than the nasal catheter or tube, can be reasonably or even safely run without regularly spaced analysis of the oxygen content and appropriate regulation of oxygen flow. The method of making such analysis can readily be learned by the nurse or an intelligent attendant.

6 Prevention of fire and explosion.

(a) The use of oxygen is always accompanied by danger of fire and violent explosion unless proper precautions are observed.

(b) The following articles should be kept out of the oxygen room and away from all oxygen apparatus matches, lighted cigarettes, and other flames, electrical appliances such as heaters, heating pads, and flashlights, inflammable preparations such as alcohol, ether, benzene, vaseline, and mineral oil. With the application of such precautions no apprehension need be felt.

7 If it is necessary to take the patient out of the tent or to stop oxygen administration,

this should be done quickly and the oxygen treatment should be resumed without delay

VIII Convalescence

Medical Aspects

A Period of complete bed rest

1 It is generally thought advisable to continue this period for at least a week after the temperature has reached normal

B Period of progressive return to activity

1 This is usually started by allowing the patient to sit up in bed for intervals of progressive duration then to use the wheel chair and the bathroom so that he may gradually return to normal activity

C Diet

1 Is usually high caloric and semisolid or solid during duration of complete bed rest

2 Progresses rapidly to normal diet with patient's return to activity

Nursing Aspects

A Period of bed rest 1 It should be remembered that the patient has been through a severe and exhausting illness and the convalescent course must be guided tactfully yet firmly

2 It is often difficult to make patients observe complete bed rest during this interval. Yet too rapid a return to activity will often result in months of comparative disability that could have been avoided by skillful guidance at this point.

IX Complications

Medical Aspects

A Empyema

B Serum sickness

C Septicemia

D Otitis media, acute sinusitis, and mastoiditis, most frequently in children

E Frequent terminal complications

- 1 Pericarditis
- 2 Endocarditis
- 3 Meningitis
- 4 Pulmonary edema

F Other rare complications

- 1 Pneumococcus arthritis
- 2 Thrombophlebitis
- 3 Peritonitis
- 4 Lung abscess
- 5 Acute nephritis

Nursing Aspects

A Empyema Nurse should report such symptoms as elevated temperature, lassitude, failure of appetite to return, night sweats, and localized tenderness over chest

B Serum sickness Nurse should report first evidence of low grade fever, joint stiffness and pain, urticaria, or swollen, tender glands

D Otitis media, mastoiditis, etc Discharging ear, earache, mastoid tenderness should be noted by an observant nurse and reported

E Meningitis Stiffness in neck, if noted, should be reported at once

F Other complications 1 Nurse, by reason of constant attention, morning bath, etc., often is in position to make the first observations

2 Thrombophlebitis This, when it occurs,

is most frequent in the femoral region. Redness and pain over veins should always be noted and reported at once. Such areas should not be rubbed or massaged but should be kept absolutely quiet and protected from trauma.

X Prognosis

Medical Aspects

Certain factors are recognized as materially altering the outlook in any given case. These are:

A Age, the outlook being more unfavorable at the extremes of life.

B Virulence of the micro-organism causing the infection.

C The presence of bacteremia, unfavorable.

D The duration of the disease before specific treatment is instituted, the shorter the interval the better the prognosis.

E The presence of cardiovascular or other chronic debilitating disease, adds an additional hazard.

F Leukocyte response, an inadequate reaction being a very unfavorable sign.

Nursing Aspects

An evaluation of the factors relating to prognosis will aid the nurse in the understanding of her case.

XI Responsibilities

Nursing Aspects

The major responsibilities of the nurse with respect to the problem of pneumonia control are:

A. To be alert in her daily contacts for symptoms suggestive of early pneumonia, and to insist upon adequate and prompt medical consultation in such cases.

B. To disseminate, as far as possible, simple and accurate information to lay contacts with respect to the early recognition and prevention of pneumonia.

C. To do everything within her power to provide the most efficient and adequate nursing care of pneumonia patients in her charge.

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Historical Article*

A HISTORY OF MEDICINE IN THE STATE OF NEW YORK AND THE COUNTY OF MONROE

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Part II History of Medicine in Monroe County

Chapter III

The Early Medical Societies

Organized medicine initiated, Officers and members of County Society, Difficulty of attending State meetings, Early records, Objection to restrictions by citizens Fight against quackery, Stand regarding revision of code of ethics, Change in name of County Society, Formation of other medical societies Rochester Medical Society 1866-1881 New germ theory discussed, Typhoid in Eighth Ward Theories of origin Rochester Pathological Society 1871 to date Formed for dissection, Requirements for admission Scientific papers and social side Public health problems Made section of Academy

County Medical Societies have existed in most of the counties of New York State since 1806 Ontario County, which included Monroe County before 1821, organized a county society in 1806, in conformity with the state law of that year This county, like Monroe County, lost its early records by fire, so that little is known regarding its early meetings In 1821, when Monroe County was formed, a County Medical Society was soon organized, an evidence of the prompt action of which the Rochester physicians were capable. It is unfortunate that we are dependent upon odd sources for information concerning the early activities of the Society, information which is quite incomplete.

The first meeting on May 9, 1821, was announced in the newspaper of April 3, 1821, notice being given to all physicians and surgeons residing in the County of Monroe that a meeting would be held on the second Wednesday of May at ten o'clock in the morning at the home of John G Christopher in the village of Rochester for the purpose of forming a Medical Society according to the law of the State. At that meeting Dr Alexander Kelsey was chosen chairman and Dr John B Elwood secretary Credentials of the following were approved Joseph Loomas, Nathaniel Rowell, James Scott, Allen Almy, Daniel Durfee, Daniel Weston, Isaac Chichester, Alexander Kelsey, John Cobb, Jr, John C Vought, Chauncey Bradle, Theophilus Randall, Frederick F

Backus, M D, and Ebenezer Harmon We note that but one of the above had a medical degree. Election of the following officers then took place president, Dr Alexander Kelsey, vice-president, Dr N Rowell, treasurer, Dr Anson Coleman, secretary, Dr John B Elwood Censors elected were Drs Freeman Edson, John B Elwood, Frederick Backus, Ezekiel Harmon, and Derrick Knickerbocker Nothing further is mentioned in the paper of this society until the annual meeting in May of the next year when the officers elected were, president, Frederick Backus, vice-president, Janna Holton, secretary, William H Morgan, treasurer, Anson Colman, censors, John B Elwood, John Cobb, Jr, George Marvin, M D, Linus Stevens, and Anson Colman Credentials had been received that year from the following Anson Colman, William H Morgan, M D, B Gillette, James Holton, Ezra Strong, William Gildersleeve, Linus Stevens, George Marvin, M D, John B Elwood, O E Gibbs and Barzillai Bush, M D Again we note the few with a medical degree These few with degrees were graduates of medical schools while the rest were licensees of the County Society, who had received their training as apprentices of other practitioners

That county societies functioned early as judiciary bodies is evidenced by a quotation in the very early newspapers, of action taken by the society at Buffalo to expel from the Genesee County Society a Doctor Oren Lee of Bergen for malpractice. This was one of the rights given the county societies

* Continued from our December 1 issue.

by the state law and one of their particular duties

The members of Monroe County Medical Society seldom attended the meetings of the State Society in Albany. An old account book of Monroe County Society records an item of \$15 00 paid as the expense of Dr Backus in attending the meeting in 1829 and a \$45 00 expense of the delegate, Dr A G Smith in attending the one in 1832. Few of the State proceedings mention either delegates from this county or contributions from its treasury. We feel sure from our reading that this was not from disinterest nor neglect but was occasioned by the considerable expense and the tediousness of travel as well as the time required for the trip. The practitioner of those days covered a wide territory in his visits to his patients, just as physicians in isolated districts do today but with this difference, that travel had to be done on horseback or by horse and buggy over bad roads made almost impassable in winter. As always, sickness was increased in the winter months and the State Society session was held in February, one of the worst months for a physician to leave his patients. President Wey of the State Society said at the State meeting in 1872

At its organization and for many years thereafter this Society was limited in membership. Attendance at its sessions were confined to members and delegates living in the near neighborhood of Albany. The season of the year and the difficulty of travel rendered it impossible for members of the profession residing fifty to one hundred miles from the capitol to be present at the annual meetings. Physicians in the northern, western, and southwestern limits of the States were as distant in time from Albany in midwinter, during the first twenty-five or thirty years of the existence of this Society, as we are now from the Western territories.

The treasurer's book of the Monroe County Medical Society fortunately was not in the fire that destroyed the early secretary's book and from it we get some understanding of the financial history of the Society. The membership fee was \$1 25 but no regular dues were charged. At each annual meeting a tax was voted based upon the financial needs of the organization, ranging from fifty cents to a maximum of two dollars. This account book, small as it is, contains the accounts from 1829 to 1874. Conover states that the early minute book was lost but that records from 1842 exist, however,

there is no present trace of this book. We read in the early newspapers of various meetings of the Society, for example, notice of an annual meeting to be held on Wednesday, May 14, 1823 at eleven in the morning at J C Christopher's and signed by the secretary, O E. Gibbs.

The earliest minute book which has remained begins with the stated meeting of June 9, 1875. The society held but one regular meeting a year, with any number of special meetings, usually two to four, held during the year for the transaction of necessary business but generally for the purpose of passing resolutions upon the death of a member. The annual meetings for years, were all-day sessions and were held for some time in the Common Council Chambers of the Court House, the members going outside for the annual dinner. Most of the day was given to reading scientific papers prepared by the members followed by serious discussion. Many of these well-prepared papers are recorded in the minutes and give considerable information regarding medical and surgical practice of the time.

There was considerable discussion in 1876 of the application of the metric system to prescription writing and it was thought desirable that all physicians should familiarize themselves with the system with a view to adopting it later.

As we have seen in reviewing the history of the State Medical Society, the right of the County Societies to prevent the illegal practice of medicine and to bring the offenders to the court for punishment, was misunderstood by the citizens whom the medical profession was trying to protect. In the *Rochester Advertiser* of 1830 we read

A county meeting has been held in the Court House, of which Col Rawson Harmon of Wheatland was chairman and Col A W Riley, secretary, to petition the Legislature for the repeal of the act for the "regulation of physic and surgery." It will be remembered that a person was fined fifty dollars and imprisoned thirty days and another indicted for practicing contrary to the provisions of the statute. The meeting considered the protection granted by this act to regulate physicians "unconstitutional as creating a monopoly," etc. The address issued by it asks, "Have not other societies an equal claim for protection as the Medical Society? If it be constitutional to grant protection to societies or professions, the clergy of the most popular denominations, have stronger grounds for this claim than the doctors of physick, seeing that the health of the soul is

of more consequence than that of the body, and they have also spent their time and money in learning Divinity in the Theological Seminary and have as just a right to protection from those preachers who have not so studied, as the Medical Society have to be protected from a few root and steam doctors scattered over the country" This is the substance of their address and indicates clearly enough their ground of action. The reader can judge for himself.

Three months later, in April, that same paper contained a long account of the trial of a steam doctor in Philadelphia who steamed a child to death and who was found guilty of a misdemeanor. No objection is made this time to the verdict.

The following article quoted from a Lynchburg, Virginia newspaper by the *Rochester Advertiser* in January 1831, was said to be an authentic advertisement of a so-called doctor in Illinois. We may believe or be skeptical as we please, at least it is interesting, coming from that time. The advertisement quoted reads

In offering of my servics to my fello citizens as a publik sarvant, I wuld putricularly remark that I has fur these last nine munnth past, pade the most strictest cares and attentions to the study of physick and I do hope that my natral turn and abilities together with the most closest observation will intitle me to the publik confidence. It wuld be rong in me to purtend to any high larning for you all know that I never rubbid my cote against these collidge walls, nor superintended any of these United States lektur's for lite and knowledge and phosocal docterns. But I hope there will be no objection to me. There is a great deal of the collige felloes that nose no more about an Epidemick oppuration than a three yere old colt and if you was to send wurd for one to cum and see a pursun flat on his back with Apilexy, they wuld no doute give him cold water, which you welkk noe wuld produce an instaneous evacuation of the bowels. My medesons is Simples, consisting of horehoun, ambeer, gypsum weeds and grean gorn seeds, burdok, tanza, grean snake root and mullin—and many other plants of the same kimmical nator. I have a good deal of pations a waittin on me and if you just only give me a call I wuld even git up nite ur day fur to sarve. Your sarvant, Doctur Pea

Whether this be the boasting of an ignorant person or the ironical writing of a disgruntled or disgusted practitioner, it sheds some light upon the misunderstanding then prevalent. For the same reason, let us include another article published in that paper the same year. It was written by an

unsigned subscriber after reading an article telling of the treatment by a quack, of a man and his son ill with scarlet fever. Whether it was written by a layman or by an indignant physician, each must decide for himself. It reads

It has always seemed strange and very surprising that these vultures are suffered to "steam, sweat and labeliaize" their patients to death in as Christian land as ours is, with impunity, and how these men came to institute themselves into the good graces of our law makers so far, as to have their trade or calling partially legalized, has often been enquired.

It is true that there are a great many good root and herbs in our country which are of singular efficacy when used under the prescription of skillful practitioners and there are a great many respectable old ladies who are competent and safe practitioners in the herb line. But there that course should stop.

The law should not allow every lazy drone in the country, who can muster a dollar to purchase one of Thompson's death warrants, to ravage the country with his pepper potions and lobelia pukes and Nos 1 to 6 of the henbane trash. The Law should not allow them to practice, admitting that it does not provide for collecting their bills. We have, too, quite enough of those who have pretensions to practice by virtue of their diplomas, to need a recruited force from the hedges.

A Thompsonian lecturer will engage to qualify a man to practice in his own family and give him a book and medicine for a year for about \$20 00. Now this is attractive, a farmer, for instance, reasons within himself thus: now here I get the science of medicine itself and printed directions, all for \$20 00, next year I shall have only to buy a small stock of medicine, or collect it myself, so I can get along next year with only a trifling charge, where as a single bill from a regular physician should equal all my expenses for two years.

The Steam Doctors admit that they may destroy life in their practice but, they say, the Mercury Doctors kill ten to our one.

During the early settlement of this country, it is true that Mercury under its various forms, was a principle material in the physician's saddle-bags. But at this day, its indiscriminate use is not so very much, since the beginning of the present century.

We certainly do not object against the use of herbs, if the study of the nature and the use of herbs does not belong to the duties, or the course of the Regular Medical Students, we have no doubt but that most of the best read students understand the nature of the application of the powerful qualities of some plants in the vegetable kingdom. It is not therefore, against the herb student or the herb practitioner,

that we would inveigh, it is against Quacks and ignoramuses, who only know just enough to destroy the life of every patient who is so unfortunate as to come into their hands.

Again we say, we feel justified in quoting such articles as these in this record, because we are not only giving historical facts regarding the development of medicine and medical societies in this region but we are also trying to portray trends in public thinking regarding the practice of medicine and showing its influence upon the development of public health laws. We realize the danger of too much dependence upon newspaper accounts for historical material. Frequently facts are distorted or elaborated upon to add interest and color. We will include some of them for the same reason and leave it to the reader to sift the truth in the newspapers, we cannot omit except records. As has been stated, many of the old books of the medical societies have been lost and we must obtain information wherever it is available and trust that most of it is fairly accurate.

Returning to the discussion of the power of the County Societies, we find that Monroe County Medical Society concerned itself not only with the licensing of practitioners but extended its jurisdiction to the practice of midwifery and in 1878 the Board of Censors reported at the annual meeting that eighteen candidates in midwifery had been examined by the Board and eleven had been given certificates to practice. Five dollars was demanded for each diploma but only twenty-two dollars had been collected. In 1881 a special committee appointed to enforce the new state law reported that two arrests had been made for illegal practice but it was not until 1890 that a decided stand was taken against quackery and a committee appointed to make investigations of illegal practice in the city, reported at the annual meeting that they had been unable to bring about any convictions because patients previously treated by the unlicensed practitioners had refused to commit their statements to writing. In 1894 the Committee on Quackery reported that the revision of the law of 1890 in 1893 made it easier to regulate the practice of medicine in New York State and also that a local law required all midwives to register. As the State law now recognized the Homeopathic and Eclectic Societies, the County Society

passed a resolution that its committee on quackery act with local Homeopathic and Eclectic Societies to prosecute violators of the laws regulating the practice of medicine. The following year the Committee reported that the three societies were cooperating and had done a big job in listing all practicing physicians and checking to see if all were licensed to practice. They found that 279 had registered and forty-seven had not, but a few had complied with the regulation since. Several of the offenders had been arrested by the District Attorney and found guilty, while some others had left the city. Examples of quackery in Rochester were cited as "so-called magnetic healers, faith curists, natural bone-setters, lady magnetists who treat men only, electro-therapeutists who treat women in various stages of amenorrhea, pregnant or non-pregnant, visit will call each day and pray for knitting of broken bone or relief of pain in pneumonia, etc." The Society appropriated twenty-five dollars for the expenses of the Committee.

In 1897, an appropriation of \$100.00 was made to further the work of the Committee on Illegal Practice which must have been well used for the following year the Committee reported that the town was being purged of quacks, and the next year the Committee asked to be dismissed as no further progress had been made. We do not hear of this Committee again until 1902 when it stated that an attempt had been made to get an indictment against a certain man and had failed.

Let us consider now the code of ethics and its effect upon the practitioners and upon organized society. We discussed earlier the repealing of the old code of ethics by the State Society in 1884. There was a discussion of the code at the annual meeting of the County Society in 1882 and the members voted for abrogation of the code upon motion made by Dr. William S. Ely but it was by no means an unanimous vote, for fifteen voted for repeal and ten against. The code had been discussed at the special meeting in 1876 and Dr. Jonas Jones at that time stated that while he agreed with the code of the American Medical Association, yet he thought it right to publish in the newspapers the fact that a physician had removed his office or that he had been called to attend an accident case. Dr. Mon-

roe remarked then that the code of that day was more arbitrary than it had been fifty years earlier. That discord regarding the old code existed in the County Society as it did in the State Society, is evidenced by the address given by the President of the County Society, Dr E. M. Moore when he said that he had intended to give a history of the Monroe County Medical Society but would not do so as "this would lead him to say something about the disreputable position the society now held and he desired to avoid this" and he therefore changed his topic to "Is medicine a science?" We regret that Dr Moore did not give the intended history for he might have recorded much that is not now available. This same Rochester physician at the time of the big disagreement in the State Society regarding the code, advised further consideration before serious steps were taken. Those who were planning resignation from the old State Society and formation of a new organization, paid honor to Dr Moore for his words of caution but felt that the old Society was adamant and nothing was to be gained by waiting.

In 1906 the New York State Medical Association and the Medical Society of the State of New York, as we have told earlier, adjusted their differences, and became one body. In May 1903, the Monroe County Society passed a resolution favoring this union and Dr J. R. Murphy stated that "while the national profession had lost much in the past twenty years in the absence of the New York profession, the New York profession had lost much of its prestige because of the unfortunate rupture and strongly urged the profession in the New York State Society to come in, now that the American Medical Association had let down the bars." At the annual meeting the following year the County Society ratified the agreement for consolidation of the two state societies. The name of the Monroe County Medical Society was changed to that of the Medical Society of the County of Monroe in agreement with the new State Society requirement and the first meeting of the reorganized County Society was held on February 28, 1908 and a new election of officers was held, the old officers being re-elected.

In the meantime, other medical societies had been formed in Rochester. The Rochester Medical Society had a brief existence

Formed in 1853 with a short life, it re-organized and endured from 1866 to 1881. The only minute book now remaining is from 1876 to 1881. The constitution printed in 1876 states that the society shall be composed of legally qualified physicians of Rochester and vicinity in good and regular standing who are members of the Monroe County Medical Society and that the Society shall be regulated by the code of ethics of the American Medical Association and by such rules as it shall enact. In September 1876, Dr E. M. Moore, Sr., occupied the entire evening reporting the proceedings of the International Medical Congress which he had attended as a delegate of the American Medical Association. He spoke of the address given by Chief of the Surgical Section, Mr Joseph Lister of Edinburgh, on the subject of antiseptic treatment of wounds. Dr Moore said, "The results claimed by Mr Lister for this treatment were so wonderful as to completely astonish his listeners, old in the profession and teachers of surgery as they were" and, he further remarked, "If no more than half claimed by Mr Lister for this method should prove true, it would still be the greatest contribution made to surgery within the last two hundred years."

All new theories of medicine and surgery were not so enthusiastically received and in that same year (1876) the minutes of the society contain interesting accounts of arguments regarding the new germ theory recently presented. The discussion arose because of an epidemic of typhoid fever in the city, there having been reported fifty cases within four months, all within a small district in the eighth ward. The local Health Officer had investigated and found all of the cases were living within one thousand yards of the corner of Reynolds and Hunter Streets, upon which corner there was located a well used by the afflicted families and that this well was contaminated with surface water. The well was ordered closed and Hemlock Lake water supplied. Two hundred nineteen individuals in forty families had used the well. Dr Stoddard believed that a specific poison was the exciting cause of typhoid fever and that "this poison is never spontaneously generated but is continuously generated. Decomposition whether of animal or vegetable matter is not, in itself sufficient for the production of the specific element but in such decomposition,

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sent from the meeting that year. It was the time of trouble in the State Society which we have discussed earlier. The minutes of that last meeting end abruptly and are partly on rough paper, not entered into the book. We can presume that the Society there ended *sine die*. Dr. Edward Angell in his chapter in the History of Rochester and Monroe County by Peck, states, "Its membership embraced the more prominent of the city physicians of its time but its very success was the cause of its downfall, its elaborate suppers becoming too great a burden and toward the close of the seventies it faded away."

Let us retrace our steps and go back to the origin of another medical society in Rochester, one that began in 1871 and is still prospering. In the summer of 1871 Dr. John Oakes, Dr. Buckley, and Dr. Udell met at the office of Dr. Oakes at the corner of Main and St. Paul Streets and formed a society known as the Rochester Pathological Society, formed for the purpose of studying dissection. Doctors Roe, Franks, Gallery, Starr, Baker and Weigel were the early members. The society obtained a cadaver and met once or twice a week for work and quizzes, meeting in a room in the same building in which Dr. Oakes had his office and sometimes dissecting in Dr. Starr's barn. Then the city donated a sum of money to the Society for the purpose of founding a dispensary and, as the minutes of 1884 state, "after awhile, the dispensary died from exhaustion, the members of the staff dropping out one by one and leaving no assets but some liabilities." This dispensary will be discussed at length when the smaller organizations of the city are considered.

The meetings of the Pathological Society were held in the homes or offices of members up to 1878 when the Rochester Whist Club was selected as a meeting place. After the meetings adjourned, the society members repaired to nearby restaurants for refreshments. Beyond these facts and that Dr. Udell was first president, we know little of the early history of this medical organization. If there was an early minute book, it disappeared long ago and the first record it begins with the meeting of September 7, 1875, four years after the Society was begun. As stated in the constitution of the organization, its purpose was to "form among the younger members of the profes-

sion a working body who shall meet as often as the by-laws provided, for social intercourse and mutual improvement in the medical and kindred sciences." Through the many years that this Society has functioned, the social side has not been neglected and during most of the years there has been a repast following the meetings and an annual picnic, the latter always serving as a reunion.

At first, meetings were held twice a month with semi-annual meetings and election of officers. Later there was but one annual meeting and officers served for a year. The by-laws of the Society were subjected to repeated changes, dealing mostly with admission to membership. In the early years, membership in Monroe County Society and six years of practice in medicine were required for admission. Later the years of practice clause was revised as it was felt that the Society had much to give the young practitioner and membership should not be denied him. Beginning in 1891, a thesis was required before candidacy for membership was considered. Blackballing rather successfully kept out unpopular candidates but often, too, barred some of the worthy practitioners, when personal feeling was allowed to influence a vote. It was recognized that many desirable medical men were withholding their applications for membership fearing the blackball and the power of election to membership was placed in the hands of the Council, the governing body of the Society. Until then the names of proposed members had been read in open meetings and elected or rejected, without these men having expressed a desire for membership. This was remedied by having written applications received, which rule is still in existence.

It is difficult to follow through all these changes in the by-laws but each was thoughtfully made for the benefit of the individual and of the organization. The Society did a splendid work in those early days, bringing to the members the newest in medical literature and therapeutics. Carefully prepared papers were presented by the members and discussed by a large percentage of the listeners and these discussions were often spirited and lasted until a late hour with no decision reached and the members parting in amiable disagreement. Sometimes the Chair appointed a member to search the literature concerning

the specific element unquestionably finds favorable ground for its growth and multiplication. The poison may retain its vitality even for years. It may enter the system with the air we breathe, or with the water we drink, the latter being the more apt to contain it. If a privy containing the dejections of a typhoid fever patient is located near a well the specific poison may find its way through the soil and thus contaminate the water, or the water in which the bedding or utensils used by the patient may be thrown on the ground and find its way into the well from the surface." The Board of Health had passed a law that spring ordering all wells closed that were located within twenty feet of a privy. The Eighth Ward well mentioned, received surface washings of horse urine and manure and besides, the owner of the well had recently recovered from typhoid and it was suggested that probably his excreta had entered the well.

Dr Montgomery objected to the findings of the Health Officer. He said that the well had been used for many years and there had been no typhoid before and besides, Professor S A Lattimore of the University of Rochester had analyzed the water and found nothing harmful. Dr Montgomery thought that "every human being is born into the world with the germs of certain diseases within him and that no matter what his surroundings, no disease can be produced in him, the germ of or the tendency to, which is not congenital." He expressed his belief that "there is only one way by which we may hope to eradicate disease and prolong the duration of human life and that is by improving the breed."

Dr Hovey said at the same meeting, that there had been sewers dug recently in the vicinity of the well, which caused a poison to be brought to the surface, this poison being the causative agent in production of zymotic disease, and that while he was ignorant of the etiology of typhoid fever, he thought it exists in the atmosphere and enters into the lungs. Just a year later, typhoid was reported again, this time in two adjoining houses on Howell Street near South Street. These two families used the same "appointments" and it was found that the drains led directly to the sewer without curved traps, therefore sewer gas was blamed for the typhoid outbreak. Again Dr Montgomery objected, for he said he knew of a

case of typhoid contracted while in Chicago and this case had infected two others here. He thought that someone from the outside had brought it to the two families on Howell Street and they had infected one another. Dr Whitbeck said he thought the physicians had gotten into a rut and classified as typhoid, typho-malarial or malarial fever, due to a misamata generated in houses through want of cleanliness. He stated further, that typhoid fever occurred rarely after forty to fifty years of age and almost never after sixty.

Again, in 1879, the minutes record that Dr Little read a paper on "Some Lessons from Nature." "He spoke in very disrespectful terms of the germ theory of disease and prophesied that fifty years hence it would be much less thought of than now. He entered a general protest against so-called antiseptic surgery which he characterized as the substitution of one bad smell for another." These observations are by no means unique but they are particularly interesting to us because they occurred here among our own practitioners, men of high repute in the county.

The membership of the Rochester Medical Society, whose minutes we have quoted, was never very large, being less than thirty-five with an average attendance of seventeen but the meetings were at first very interesting and the discussions spirited. In October 1879, a growing luke-warmness at the meetings was discussed. The minutes of that time are meager, so that we do not know whether good papers were lacking or whether the scribe failed to record them. In December of that year the secretary reported an apathy on the part of members and said there must be a renewal of interest or the usefulness of the Society was at an end. At the annual meeting the following December, it was reported that only eight meetings had been held during the year with an average attendance of eleven and that no pathological specimens had been presented through the year. Although there were only twenty-eight regular members and four honorary members, Dr Stoddard objected at the meeting the next month, to adding any new members as the Society was already too large. The last minutes recorded were of the meeting held February 7, 1881. Dr Ely reported the meeting which he had attended in Albany and said it was noticeable that noted men were ab-

small evacuation occurred. "The Society then," the minutes read, "laid itself out to beat Dr Moore's record and several exceedingly constipated stories were presented for its consideration." This meeting of 1884 was held two years before Hirschsprung's disease was first described, so that Dr Moore's report would not be considered with so much amusement today. Dr Dewey closed the discussion that night by speaking of treating impaction in the upper bowel by "the introduction of a tube into the colon and the injection of water as high up as possible." No doubt this method so abused by quacks of today was then used with discretion.

In 1884, Dr Carpenter in his paper on "Fever, a Neurosis," began by taking "a hit at the believers in the germ theory" and then stated that he believed "fever to be due to the disturbance of the equilibrium of the heat centers and that daily variation in temperature in health and disease was caused by the oscillation of the force controlling heat." Dr Farley in response, stated that he saw "no reason for doubting a heat center but the presence of one throws no cold water on the germ theory or any other theory."

The germ theory was an object of attack in this Society almost as frequently as in the Monroe County Medical Society. In 1885 when Dr Edward Angell read a paper on epidemic diseases, he stated that he thought miasmatic diseases such as cholera and typhoid fever were "contagious only through the medium of some germ from an original case which had undergone subsequent change" and Dr Streeter in reply, said, "as far as germs are concerned in the specific nature of these diseases he believed them to be an effect rather than a cause and that as far as surgery is concerned, no practical results had been attained except the greater attention to cleanliness." Then Dr Charles D. Wooden stated his disbelief that germs had any causative relation to disease and added that "his theory of disease" was that "an individual either has or does not have any particular disease according as he may have an innate tendency toward it or be free from susceptibility. He had handled smallpox without being vaccinated and without contracting it." Three years later, in 1888, Dr P. D. Carpenter in his paper on Progress in Medical Science, "ridiculed homeopathy, Christian Science

and the germ theory" and Dr Kempe arose in defense of the germ theory, having been impressed by the antiseptic treatment of wounds. It is soon afterward that we begin to read repeated references to the germ theory in these minutes, just as though its truth had never been questioned.

Dr Dewey, in 1889, read an inspiring paper on Physical Immortality in which he said that there are three periods in animal life—growth, decline, and an indefinite period between—and that "when we learn to live according to natural laws and the adjustment of our internal relation to our environment becomes as nearly perfect as the inevitable progressive changes in our organism will admit, then we may expect lives of greater length, of increased comfort and enjoyment of enlarged activities and capabilities with decline painless and slow. We can never attain physical immortality but may attain patriarchal length of days and fulness of strength."

Let us not be misunderstood in reading these abstracts of early medical papers read by the members of the Pathological Society. Many of the papers, in fact most of them, were prepared with care and great seriousness and all were earnestly striving to attain knowledge in the art of medicine. Sometimes it is hard today to believe that certain known facts were but theories a few years ago and unaccepted by many. One of the speakers at a meeting said that he did not value the contents of medical books more than ten years old and the medical readers of today rarely consult books more than five years old. Yet in reading these papers, we are not surprised at the great change in the practice of medicine but rather that so many things which were written in those days are still recognized as applicable now.

The Pathological Society until its amalgamation with the Rochester Academy of Medicine, considered it an obligation to advise in matters of public health and frequently made resolutions instructing city, county, and State in matters pertaining thereto. It kept a watchful eye upon laws about to be enacted and took action upon them. It made suggestions regarding the health of the child in school, proposed places where State and County institutions should be built, regulation of the practice of nursing, in fact, the Pathological Society functioned in regard to public health matters

the disputed subject and to report at the following session. Pathological specimens were inspected with interest and microscopic examinations ordered with a report to be made at the next meeting. Occasionally these specimens were abnormal fetuses, such as that shown in 1890 by Dr Herriman, a seven months fetus with lower limbs coalesced into one, the soft parts of the legs being perfectly joined together although the femora were separate, the fetus also lacked sexual organs and an anus. Then in 1911, Dr F A Jones exhibited a three and one-half months old fetus with closed abdominal walls with the heart, liver, and intestines outside, and also having clubbed hands and feet. Also, there were living freaks, such as the glass eater who attended a meeting in 1887 and demonstrated his ability to swallow broken glass without cutting his mouth or throat and apparently without harm to his digestive tract, and in 1894, a Sam Harrison cheerfully swallowed tacks, knife blades, shingle nails, and other such objects for the entertainment of the medical men. A few years later another would-be demonstrator of that sort was refused admission.

For many years there were no dues in the Pathological Society but an assessment was voted whenever there was a need of funds. This tax was fifty cents at first, then increased to one dollar and for many years varied from one to two dollars, finally being increased to three and even five dollars. With increased growth of the Society came multiplied activities and the need for rented quarters, causing an increase in expenditures. In 1883, the membership had grown to fifty-four and it was thought by many that a limit of sixty should be made and only those admitted who had shown superior ability but after long discussion, it was voted not to limit the numbers. As Dr Wilbur expressed it, limitation was selfishness and "if the Pathological Society is a good thing, for God's sake give every young man a chance at it."

This Medical Society differed from other similar societies of the city in having its social side. When the organization was small, a member would act as host, having the meeting at his office, and afterward serving a lunch there or taking the members to a nearby cafe or hotel. Many amusing references were made in the minutes to these repasts, as in 1882, "several motions

were made and seconded by all present and the question of final disposition of coffee and oysters was settled without a dissenting voice," and in the following year, after a discussion of postmortem examinations, "after some discussion, the Society proceeded to investigate the cause of death of numerous oysters, which were found to be stewed." Again in 1884, after arguing the merits of alimentation versus medication in the treatment of typhoid fever, "the Society adjourned and accepted Dr Dewey's invitation to Teall's where all were thoroughly convinced that alimentation was far preferable to medication."

Many of the minutes of regular meetings report in considerable detail the paper of the evening and the discussion which followed. Some of them show the change in medical practice since that time and may be sufficiently interesting to quote here while others because of their unusualness may also be of interest. In December 1878, Dr Buckley addressed the Society reporting what he had seen of the yellow fever epidemic which had recently raged in the South. He said the assistance and sympathy from the North had done more to cement the ties of friendship between the two areas than any other circumstance in the whole world could have and, he added, "perhaps a wise act of Providence thus showed the South the love of the North for them at this day." In 1883, the same physician, Dr Buckley, exhibited a specimen of an ovarian tumor and said he had been able to obtain the specimen by explaining to the relatives of the woman that it was *not* a part of the patient's body but a pathological growth and "when they understood all of the person was to be left for burial and nothing taken that *properly* belonged to her body, they made no further objection to the physician's taking away the tumor."

Evidently some of the remarks reported in the minutes are not intended to be taken seriously but we have to judge for ourselves when a smile accompanied the remark. In 1884, after a paper by Dr Darrow on intestinal obstruction, Dr Moore reported a case of a woman "whose bowels acted but once in twenty days and then passed but a small quantity," no injury then occurring, the period became thirty day and purgatives and an enema every night of a pint of water were ineffective, the enemata being retained until the thirtieth night, when a

Public Health News

MATERNAL WELFARE

The Public Health Council of the State of New York on November 20 adopted a revision of the State Sanitary Code in connection with Maternity Hospitals and

Homes and their supervision by the State Department of Health

For the information of all physicians the code, as revised, is here reproduced

State Sanitary Code

CHAPTER XII

Section A—Maternity Hospitals or Homes

Regulation 1 Definition Any hospital or home which is not incorporated and into which women not related to the proprietor or person in charge by blood or marriage are received to be cared for during pregnancy, during parturition, or while recovering from parturition, shall be considered a maternity hospital or home

Each maternity hospital or home shall have a name, which name shall appear on the license form and on all certificates of birth and death occurring in the hospital or home.

Regulation 2 License and inspection Each maternity hospital or home shall, before the admission of any patient, obtain annually from the state commissioner of health a license to conduct and maintain such a hospital or home. On and after December 1, 1936, no license for the conduct of a maternity hospital or home shall be issued to any person unless he or she is a physician or midwife licensed to practice in the state of New York, or a registered nurse registered in the state of New York, except that this shall not apply to proprietors licensed previous to December 1, 1936. On and after December 1, 1936, every proprietor of a maternity hospital or home, not a physician or midwife licensed in the state of New York, or a registered nurse registered in the state of New York, if maintaining an establishment with a capacity of four or more beds, shall employ a nurse so registered to give full time attention to maternity patients while they are under care in such maternity hospital or home.

No license shall be issued by the state commissioner of health to any person to maintain a maternity hospital or home unless the commissioner or his duly authorized agent shall have made an inspection of the premises. A record of each such inspection shall be made on a form prescribed by the state commissioner of health and such record shall be filed in his office

In each maternity hospital or home the license shall be kept posted by the licensee in a conspicuous place

Each license for a maternity hospital or home shall state the maximum number of beds which are provided and reserved for maternity patients only and no more maternity patients than that number shall be cared for at any one time. The capacity as stated in the license shall not exceed the number of beds so reserved.

Every proprietor of a maternity hospital or home shall maintain a register containing the names and addresses of all maternity patients cared for and such other information as may be required by the state commissioner of health or by section four hundred eighty-two of the penal law and section three hundred three of the state charities law

If the maternity service for which such license was issued be discontinued, or if the license expire or be revoked, such license shall be returned immediately to the state department of health, together with all registers

Regulation 3 General requirements In maternity hospitals or homes each patient shall have and occupy a separate bed located in a room adequately ventilated and providing at least eighty square feet of floor space for each bed.

In any maternity hospital or home in which there are rooms accommodating more than one patient, the beds shall be separated by spaces at least three feet in width, a separate adequately ventilated room shall be provided exclusively for newborn infants, with one crib for each infant.

In a maternity hospital or home with a capacity of four or more patients, a delivery room which shall be used for no other purpose, shall be provided and maintained, separate and distinct from the bedrooms and from any operating room used for general hospital service. The delivery room shall be equipped with running water and

just as the County Societies do today and as they tried to do then, less effectively though because of their infrequent meetings.

Mention has just been made of the amalgamation of the Pathological Society and the Academy of Medicine. The proposal for uniting the two societies appears without warning in the minutes of the Pathological Society, but it had been discussed for some time by the Council. In October 1908, an entire evening was given to the question of amalgamation and it was decided to canvass the membership to get the general opinion concerning it. On November 27, that year, the president stated that seventy-six postcard ballots had been received, sixty-five voting for and eleven against and the amendment was declared carried. Those who opposed the affiliation were not lukewarm in their opposition and did everything within their power to prevent such action. On February 18, 1909, a

determined effort was made by a few members to have the amendment rescinded and the vote was ten to fourteen against. One member in desperation threatened to apply to the court for an injunction restraining the Society from amalgamating. Evidently he forgot his displeasure for we soon find him as active in the Society as ever.

Except that the Pathological Society was now a section of the Academy of Medicine, there was not a great deal of difference in its function for some time. Gradually, outside speakers were dispensed with and the Society no longer took action upon civic and State affairs. Before discussing the work of this Society further, we shall consider the origin of the Academy of Medicine and the events which led to its organization.

Reference

¹ Conover, Geo C *History of Monroe County*
1893

(To be concluded in the next issue)

MISCHIEVOUS IMAGINATIONS

As the New York papers report it, some three hundred children's specialists had a merry and perhaps informative time on Nov 12 listening to some of their colleagues speak harshly of medical jargon and rip into doting mothers, spoiled infants and Freudian dilettantes in plain, every-day words.

The round-table fireworks, conducted at the New York Academy of Medicine, were ignited by a paper read by Dr Leo Kanner, of the Johns Hopkins School of Medicine, who remarked that a child is often the parents' hypochondriac organ.

Invalid reactions, he remarked, were found in persons of all ages, often being substitutes for thwarted ambitions, failure in love and unhappiness in marriage. These reactions, he said, included imaginary headaches, stomachaches, heartaches and other pains "demanding no end of consideration and commiseration" on the part of families, friends, doctor and druggist.

Most cases in childhood, he went on, came from the ranks of the pampered. He cited the boy who had a cramp in the arm during arithmetic lessons only, and several children who were violently ill only from Monday through Friday, with full parental en-

couragement. Jabbing at the technical terms employed by the followers of Freud, Dr Kanner advocated elimination from the language of such terms as neurosis, prenatal influence, inferiority complex and mother fixation. He also would ditch talk of a person having "a touch" of this or being "on the verge" of that.

Continuing the discussion of over-indulgent parents who artificially retard self-dependence in their children, Dr William S Langford, of the pediatric clinic at Babies Hospital, said there was such a thing as a mother having a real need for a child to be sick. Dr Herbert B Wilcox suggested that perhaps the thing hypochondriac children need most is scientific neglect.

Dr Ira S Wile, mentioning the "illness" which the offspring of over-indulgent parents develop after an appendectomy or a tonsilectomy, was of the opinion that perhaps the only cure might be a "parentectomy." Discussing pampered youngsters, he told one of his parents who said to him, "if you don't get a toy I'll have a vomiting spell, and the child selected, as the setting, no less prominent a corner than that of Fifth Avenue and 42nd street.

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furnished with such minimum equipment as may be prescribed by the state commissioner of health. Except with the permission of the state commissioner of health such delivery room shall be located on the same floor as that on which the maternity patients are cared for.

Where general hospital service is given, the bedrooms for maternity patients and for newborn infants and the delivery rooms shall occupy an entire floor, or a separate wing of a floor, reserved exclusively for maternity patients, and the floor or wing so reserved shall not be occupied by other medical or surgical patients.

Every floor in a maternity hospital or home shall be adequately equipped with fire extinguishers approved by the state commissioner of health, and no patient shall be cared for above the first floor unless there is adequate provision approved by the state commissioner of health for safe exit in an emergency, with easy access from patients' rooms in case of fire.

The surfaces of all ceilings, walls and floors and furnishings in delivery rooms and in rooms to be occupied by maternity patients or newborn infants shall be of washable material and such rooms shall be provided with suitable equipment necessary for the care of mothers and infants. Such rooms shall be maintained in a cleanly condition at all times.

Adequate and sanitary bathing and toilet facilities shall be provided for maternity patients and for infants.

All outside doors, windows, and other outside openings shall be screened, except during the winter.

Adequate facilities shall be provided for the sterilization of instruments and water, and for the steam sterilization of supplies.

Each maternity hospital or home shall have at least a minimum of equipment as prescribed by the state commissioner of health.

Regulation 4 Standard procedures. No maternity patient shall be cared for in the same room with a patient not a maternity case and equipment and beds used by maternity patients shall not be used by other persons.

Except in a temporary emergency, no infant shall be cared for in a maternity hospital or home except during the residence of the mother therein, without the approval of the state commissioner of health or his authorized agent.

Every patient in a maternity hospital or home shall be attended during confinement and supervised during the puerperium by a registered physician or a licensed midwife.

The advantages of breastfeeding shall be explained and emphasized to the mother by the physician or midwife in attendance and artificial feeding shall not be resorted to except upon a specific written order from a physician.

It shall be the duty of the attending physician, midwife, nurse or other person in attendance on a confinement to drop into both eyes of the infant immediately on delivery a one per cent solution of nitrate of silver or some other agent equally efficient for preventing ophthalmia neonatorum.

Before either mother or infant is taken from the delivery table or bed, a means of identification approved by the state commissioner of health shall be attached to each newborn infant and such means of identification shall not be removed from the infant until discharged from hospital or home.

All drugs and solutions shall be correctly and distinctly labeled and kept in a locked closet when not in use.

A chart shall be kept for each maternity patient and for each newborn infant, which shall show the history of the case, results of examinations, progress of the case and such other data as may be required by the state commissioner of health, and on a form approved by him.

Regulation 5 Communicable disease. No maternity hospital or home, shall accept for care or treatment any patient, not a maternity patient, suffering from influenza, erysipelas, or an infected wound or lesion, or from a communicable disease required to be isolated by the sanitary code. A maternity patient suffering from any such disease may be admitted and cared for in a maternity hospital or home if a separate room with adequate isolation facilities is available and such patient is isolated in such room.

In the event that a case of (communicable) such disease develops in any patient in a maternity hospital or home, the patient shall be isolated in accordance with instructions of the local health officer, and the bed and equipment used for such patient suffering from such disease shall not be used (again) for a maternity patient until they shall have been disinfected in accordance with the instructions of the health officer, and no other patient shall be admitted to the hospital or home until permitted by the health officer.

Regulation 6 Reports. At the end of each calendar year the licensee of an unincorporated maternity hospital or home shall submit to the state commissioner of health a report of maternity cases cared for during the year and such other data and in such

form as may be required by the state commissioner of health

Regulation 7 Revocation For failure to comply with any state or local law, rule or regulation, or for any cause which the state commissioner of health may deem a menace to the health of the patients in the maternity

hospital or home, any license may be suspended and, after due notice and opportunity for hearing has been given, may be revoked

Regulation 8 When to take effect. Every regulation in this chapter, unless otherwise specifically stated, shall take effect on the first day of December, 1936

MEASLES AND SCARLET FEVER

Manhattan Convalescent Serum Laboratory

Convalescent Measles Serum and Convalescent Scarlet Fever Serum are available at the Manhattan Convalescent Serum Laboratory which is located in the Research Laboratory division of the Department of Health, at the foot of East 15th Street This laboratory has the cooperation of the Department of Health, and has been aided by the grant of funds from several foundations

The serum is prepared from blood obtained from adults convalescent from or recently recovered from measles or scarlet fever Since the serum is human serum it does not cause reactions when injected subcutaneously, intramuscularly or intravenously It, also, does not sensitize individuals to subsequent injections

Measles Convalescent Serum should be injected subcutaneously within five days after an individual's exposure to this disease for prevention, or up to the eighth day, to limit the disease to a modified or attenuated form

Scarlet Fever Convalescent Serum is useful in preventing the disease when injected

shortly after exposure. It is particularly useful in treatment when given within the first three days of the disease, and when administered intravenously It, also, has value in treating patients with complications, and whose admission to the hospital has been delayed

Serum is distributed only through physicians for their private patients or to institutions and hospitals

In order to maintain the supply a charge sufficient to cover the cost of production is necessary

Several other types of convalescent serum may be available in the near future.

The new service is under the immediate direction of Dr William Thalheimer, who will be glad to discuss the use of the various sera with physicians who may be interested Address the Manhattan Convalescent Serum Laboratory, Foot of East 15th Street, New York City Telephone, Stuyvesant 9-3100 On weekday evenings and on Saturdays, Sundays, and holidays after 4 P M call Worth 2-6900

MICHIGAN'S 'FILTER SYSTEM'

Considerable attention is being attracted by what is known as the "filter system" in use in Michigan to sift out the worthy from the unworthy who apply for free hospital and medical care There are really two filters, it seems, one medical and the other economic. As described in a western medical journal, the economic filter is composed of the County Judge and two representative business men (not politicians) who investigate the economic status of the applicant. The reason for having the County Judge as a member of the filter is that he has authority to administer oaths and it is possible then to obtain sworn evidence The investigation by these three determine definitely the economic status of the applicant.

The medical filter is composed of the County Health Officer, one Surgeon and

one Eye, Ear, Nose and Throat specialist. This filter determines the necessity of medical care and whether or not the condition is an emergency, demanding hospitalization.

After an applicant is acted upon favorably by these two filters it is a proper case for hospitalization and special care. Should either filter find reason to object to admitting the applicant for hospitalization the case is then dismissed so far as this sort of assistance is concerned.

By the application of this method the medical profession receive the protection they deserve and are not called upon to operate cases where emergency hospitalization is unnecessary, and are not called upon to do work free of charge for people who might be in position at some future time to meet this expense.

Medical News

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Albany County

DR. ANDREW MACFARLANE, seventy-two, the first physician in Albany to use anti-toxin in diphtheria cases, died on Nov 10

Originator and editor for a time of the Nelson Loose Leaf System of Medicine, Dr MacFarlane wrote for various medical journals and publications

Albany's first bacteriological and pathological laboratory was established by him in a room in the old Albany Medical College which stood at the junction of Eagle, Lancaster and Jay Streets

At one time, he was attending physician at the Albany Hospital, St. Peter's Hospital and Memorial Hospital and at the time of his death was consulting physician at St Peter's Hospital During the World War, he was captain in the Medical Corps

Having once served as president, he was active in the affairs of the Albany County Medical Society

Bronx County

THE BRONX COUNTY *Medical Bulletin* notes that "since the enactment of the state compensation law, the value of every medical service rendered has been legally established Provision is made not only for the maximum fee, but also for the minimum fee to be charged for each specific service Therefore, at the present time, we can convert the service rendered by the physician to the general public into actual cash value The Federal and State governments permit a taxpayer to deduct a certain percentage of his income which he donates to charity It then behooves us physicians to demand the same deduction for services donated by us to the city and its citizens We therefore recommend that all hospitals and dispensaries, where physicians render free services, record the number of visits and treatments rendered, in order that we may have a complete knowledge of the actual savings to the city and community through the charitable acts of the medical profession"

INTERESTING PAPERS were presented at the meeting of the Bronx County Medical Society on Nov 18 on "Recent Progress in Diabetic Surgery" by Leland S McKittrick, M D with discussion by Henry Roth, M D, and Thomas O'Kane, M D, and on "Recent Progress in Diabetic Therapy" by Howard

Root, M D, with discussion by Frederick Williams, M D, and Sol. Biloon, M D

Broome County

REGULAR EXAMINATIONS BY the family physician were advocated as the most effective means of detecting and controlling heart afflictions at a meeting of the Broome County Medical Society on Nov 10 at Lourdes Memorial hospital by Dr R. E. Morgan, professor emeritus of clinical medicine at Temple University, Philadelphia

"Cardiac afflictions are among the most frequent causes of death," Dr Morgan pointed out. "Diagnosis and treatment of such conditions are well within the ability of the average doctor at first-hand, without recourse to elaborate instrument studies" There is hope for recovery for many suffering attacks of acute cardiac condition

DR JESSE G N BULLOWA, clinical professor of medicine, New York University Medical College and visiting physician at the Harlem Hospital, spoke on "The Management of Pneumonia" before the Binghamton Academy of Medicine on Nov 10 at the Monday Afternoon club

Chemung County

THE ONE HUNDREDTH ANNIVERSARY of the Chemung County Medical Society was observed at a dinner meeting in the Mark Twain Hotel, Elmira, on Nov 21

From a handful of "country doctors" in the little city on the banks of the Chemung shortly after the new county had been whittled from old Tioga County, the society has grown to include nearly one hundred physicians

To the celebration came officers of medical groups in Steuben, Schuyler, Broome, Tioga, Tompkins, and Cortland Counties and Dr Floyd F Winslow of Rochester, president of the State Medical Association

Dr Arthur W Booth reviewed the history of the Society during its one hundred years

Dr Ross G Loop told of methods and treatments used by the profession during the last one hundred years Dr Anna M Stuart told of women physicians in Chemung County medical history

Dr Reeve B Howland had gathered exhibits connected with medical practice, instruments, and pictures of former physicians

Dutchess County

THE DUTCHESS COUNTY MEDICAL SOCIETY met on Nov 11 at the Amrita club. A nominating committee was appointed to select candidates for offices for the coming year. Dr Frederick W Williams of New York city discussed "Treatment of Diabetes," from the medical standpoint, and the surgical viewpoint was discussed by Dr Thomas J O'Kane of New York city.

Erie County

NOMINATION OF OFFICERS of the Erie County Medical Society and delegates to the state convention for 1937 was held in Hotel Statler on Nov 16.

The nominees are President, Dr John T Donovan, first vice-president, Dr Harry C Guess, second vice-president, Dr Carlton E. Wertz and Dr Mesco J Helmimak, secretary, Dr Louise W Beamus, treasurer, Dr Caryl Koch and Dr William F Jacobs, board of censors, Dr Charles W Bethuna, chairman, Dr Michael A Sullivan, Dr Abram Weil, Dr Francis E Fronczak and Dr Francis J Butlak.

Committee chairmen Legislation, Dr James L Gallagher, public health, Dr Nelson W Strohm and Dr R. H Wilcox, Tonawanda, economics, Dr Joseph C O'Gorman and Dr Harvey P Hoffman, membership, Dr Allen R. Long.

Delegates to the state convention (four highest to the elected, next four highest to be named alternates) Dr Roy L Scott, Dr James H Borrell, Dr Milton G Potter, Dr John Burke, Dr Thurber Lewin, Dr Harry C Guess, Dr J Herbert Donnelly, Dr W Warren Britt, Tonawanda, Dr Robert E. De Ceu, and Dr Mary J Kazmierczak.

A recommendation of the financial survey committee, composed of Dr R. L Scott, Dr James H. Borrell, and Dr Alfred Noehren, that the bylaws of the society be amended to provide for an increase in the membership dues from \$15 to \$18 was adopted.

The report of Dr Frederick W Filsinger as chairman of the health survey committee took the form of an appeal for elimination of politics from the county society.

In this line he recommended that an amendment be made to the constitution "making the cliquing of members and lobbying at election time for political purposes or dominance in the affairs of the society, which is detrimental to the interests of the rest of the membership, punishable by discipline by the society."

He further proposed an amendment that any member of the society who is an em-

ployee of city, county, state or federal government be subject to discipline of the society "if he violates the principles of professional conduct by working against the interest of the members of the society."

Kings County

OFFICERS FOR THE COMING YEAR were nominated at a meeting of the Kings County Medical Society, attended by about 200 on Nov 17.

The following slate was offered: Dr Thomas McGoldrick as president, replacing Dr Henry Joachim, Dr John D'Albora, president-elect, Dr Augustus Harris, vice president, Dr Joseph Raphael, secretary, Dr Thomas Wood, associate secretary, Dr Matrice Dattelbaum, treasurer, Dr Arthur Holzman, associate treasurer, Dr Jacques Rushmore, librarian, and Dr Edwin Maynard, associate librarian.

The nominations were preceded by lectures on dysentery. Those who spoke were Dr Albert A. Berg, surgeon-in-chief at Montefiore Hospital, and Dr Joseph Felsen, director of pathology at the Bronx Hospital.

A REGULAR MEETING of the Woman's Auxiliary of the Kings County Medical Society was held on Nov 10. Mrs Edwin A. Griffin, president, presided. Dr Irvin Sands spoke on Mental Hygiene. Mrs Samuel Zwerling, historian, read a report on the year's work. Mrs Paul Eschwald, chairman of the medical economics committee, also gave a report. Mrs Frederick Elliott, chairman of program, outlined the programs for the coming year. Refreshments were served. About one hundred were present.

Nassau County

A PLAN TO RELIEVE congestion in the hospitals of the county and improve the hospitalization of the needy, by increasing the medical funds of town welfare officers and permitting, wherever possible, a choice of hospitals, is under consideration by the Nassau County Medical Society and county officials.

After Dr Louis H Bauer of Rockville Centre and Hempstead, outlined this plan at a meeting of the society and officials in the supervisors' chambers, it was voted to appoint a committee to investigate.

The committee, it was suggested, should discuss the problem with the commission on government revision, of which Earl J Bennett is chairman, so that any definite plan adopted will conform with the new charter and will promote cooperation between doctors and the county health and charity departments.

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Having once served as president, he was active in the affairs of the Albany County Medical Society

Bronx County

THE BRONX COUNTY *Medical Bulletin* notes that "since the enactment of the state compensation law, the value of every medical service rendered has been legally established Provision is made not only for the maximum fee, but also for the minimum fee to be charged for each specific service Therefore, at the present time, we can convert the service rendered by the physician to the general public into actual cash value. The Federal and State governments permit a taxpayer to deduct a certain percentage of his income which he donates to charity It then behooves us physicians to demand the same deduction for services donated by us to the city and its citizens We therefore recommend that all hospitals and dispensaries, where physicians render free services, record the number of visits and treatments rendered, in order that we may have a complete knowledge of the actual savings to the city and community through the charitable acts of the medical profession"

INTERESTING PAPERS were presented at the meeting of the Bronx County Medical Society on Nov 18 on "Recent Progress in Diabetic Surgery" by Leland S McKittick, M D with discussion by Henry Roth, M D, and Thomas O'Kane, M D, and on "Recent Progress in Diabetic Therapy" by Howard

Root, M D, with discussion by Frederick Williams, M D, and Sol. Biloon, M D

Broome County

REGULAR EXAMINATIONS BY the family physician were advocated as the most effective means of detecting and controlling heart afflictions at a meeting of the Broome County Medical Society on Nov 10 at Lourdes Memorial hospital by Dr R. E Morgan, professor emeritus of clinical medicine at Temple University, Philadelphia

"Cardiac afflictions are among the most frequent causes of death," Dr Morgan pointed out "Diagnosis and treatment of such conditions are well within the ability of the average doctor at first-hand, without recourse to elaborate instrument studies" There is hope for recovery for many suffering attacks of acute cardiac condition

DR. JESSE G N BULLOWA, clinical professor of medicine, New York University Medical College and visiting physician at the Harlem Hospital, spoke on "The Management of Pneumonia" before the Binghamton Academy of Medicine on Nov 10 at the Monday Afternoon club

Chemung County

THE ONE HUNDREDTH ANNIVERSARY of the Chemung County Medical Society was observed at a dinner meeting in the Mark Twain Hotel, Elmira, on Nov 21

From a handful of "country doctors" in the little city on the banks of the Chemung shortly after the new county had been whittled from old Tioga County, the society has grown to include nearly one hundred physicians

To the celebration came officers of medical groups in Steuben, Schuyler, Broome, Tioga, Tompkins, and Cortland Counties and Dr Floyd F Winslow of Rochester, president of the State Medical Association.

Dr Arthur W Booth reviewed the history of the Society during its one hundred years

Dr Ross G Loop told of methods and treatments used by the profession during the last one hundred years Dr Anna M Stuart told of women physicians in Chemung County medical history

Dr Reeve B Howland had gathered exhibits connected with medical practice, instruments, and pictures of former physicians

"Focal Infection and Its Relation to Systemic Diseases"—By Arthur J Horton, M D, Assoc. Phys, Mary Immaculate Hospital, Asst Phys Queens General Hospital

"Medico-Dental Cooperation in Everyday Practice as Related to Hospital Practice."—By M. I Schamberg, M D, D D S, Att. Oral Surgeon, Bronx Hospital, Cons Plastic Surgeon, Hospital of Joint Diseases

The Annual Meeting of the Medical Society of the County of Queens was held on Nov 24 The program

Election of officers and annual reports, remarks by Mrs Irving Ponemon, President Woman's Auxiliary to the Medical Society of the County of Queens, Inc., "Organized Medicine—A Service to the Community"—By Charles Gordon Heyd, M D, Pres dent of the American Medical Association, address by the President, James M Dobbins M D, Pathologic Exhibit and Demonstration, Collation.

Dr Heyd was elected the first honorary member of the Queens County Society, and was given a life membership certificate

The election resulted as follows

Dr Henry C Eichacker, president-elect, Dr Frank R Mazzola, secretary, Dr Chester L Davidson, assistant secretary, Dr William T Berry, treasurer, Dr Daniel J Swan, assistant treasurer, Dr Herbert L Langer, Dr Vincent Juster, and Dr Edward A. Veprovsky, censors, Dr Joseph Wrana, delegate to the State Society Dr William Berry, Dr Albert L Voltz, and Dr Henry C Courten, trustees

At the same time, the annual meeting of the woman's auxiliary to the Medical Society, was held. The election resulted in the selection of the following

Mrs Elmer Kleefeld, president-elect, Mrs Henry C Eichacker, vice-president, Mrs Harold Foster, secretary, Mrs Alfred S Ambler, treasurer, Mrs John J Kilcourse, assistant treasurer, Mrs Thomas d'Angelo, historian, Mrs Irving Ponemon, Mrs John Scannell, Mrs Isidore Epstein, Mrs George Jantzen, and Mrs Walter Lynch, delegates to the state auxiliary, district representatives, Mrs Edward M Douglas, Mrs John G Hill, Mrs James De Rose Mrs Elmer Amerman, Mrs Frederick Gartner, Mrs A W Victor, M A Sanders Mrs Anthony Giambalvo, and Mrs Gerald Pauley

On Jan. 1 Dr James R Reuling, of Bay-side, will become president of the Medical Society as he was president-elect last year Mrs John W Mahoney, Flushing, will become the president of the auxiliary

A CLINICAL CONFERENCE on cancer re-

search was held at the Memorial Hospital of Queens, at Jamaica, on Nov 24, with Dr G T Pack as the speaker Discussion was led by Dr Arons and Dr Barland.

Rensselaer County

NOMINATION OF OFFICERS for the ensuing year took place at the November meeting of the Medical Society of Rensselaer County at the Troy Health Center

Officers named in the report of the nominating committee, include

President, Dr Stephen H. Curtis, vice-president, Dr Hugh V Foley, secretary, Dr Leo S Weinstein, treasurer, Dr John F Russell, censors, Dr G E Martin and Dr George D Hoffeld, delegates, Dr W B D VanAuken and Dr A J Hambrook, and alternates, Dr Clement J Handron and Dr H C Gordinier

Election of officers took place at the Health Center December 8 The annual meeting and banquet of the society was conducted Wednesday evening, December 9 in the ballroom of the Hendrick Hudson

Dr George W Crille, head of the Cleveland Clinic, Cleveland, O, was one of the guest speakers Another was Fred E Elliott, chairman of the Medical Economics committee of the State Medical Society

Rockland County

THE WOMAN'S AUXILIARY to the Rockland County Medical Society was organized at a meeting at Summit Park Recreation Hall on November 4, and the wives of the doctors were addressed by Mrs Edward A. Flemming of Brooklyn organization chairman of the State of New York.

The Executive Committee of the Women's Auxiliary of the Rockland County Medical Society met at the home of Mrs S W S Toms, South Nyack, on November 9 The business meeting was conducted by Mrs Toms and another meeting of all the wives of the doctors in the county was scheduled for November 16 at Summit Park Recreation Hall, Pomona.

The officers are president, Mrs S W S Toms, president-elect, Mrs A. N Selman, first vice-president, Mrs W J Ryan, second vice-president, Mrs F A Glass, recording secretary, Mrs E H Kline, corresponding secretary, Mrs J Pomerantz, treasurer, Mrs L. G Weishaar, historian, Mrs George M. Richards

TWO HUNDRED AND FIFTY neighbors and friends of Dr Charles D Kline of Nyack honored him Nov 12 by a testimonial dinner at the Hotel St. George marking his seventieth birthday

Appointment of the committee was suggested by Supervisor J Russell Sprague, after Supervisor A. Holly Patterson of Hempstead pointed out his town budget has already been approved and tax warrants issued, making it impossible to provide additional funds. Other board members agreed this condition prevailed in all towns and cities.

Congestion in the hospitals, it was said, has been aggravated by the hospitalization of many cases not formerly so handled and by the necessity of hospitalizing relief workers and other needy persons, for whom the town welfare authorities have no funds to provide medical treatment which could be given at home.

THE WOMEN'S AUXILIARY to the Nassau Medical Society heard Dr William H Ross, former president of the New York State Medical Society, at its meeting Nov 10 at the Nassau Hospital auditorium. Mrs A M Bell of Sea Cliff is president.

THE MEDICAL SOCIETY of the County of Nassau elected the following officers at its meeting on Nov 24: President-elect Louis H Bauer, Vice-President Myron R. Jackson, Secretary-Treasurer Herman G Wahlig, Censors E K. Horton, R E Lease, W F Lewis, N H Robin, E N Whitcomb, Delegate to the State Society (two years) L H Bauer, Delegate to the Second District Branch G B Granger, Members of Workmen's Compensation Committee S A Combes, W F Lewis, Jr, L A Van Kleeck. Dr Henry B Smith president-elect, will become president.

Niagara County

DR JAMES K QUIGLEY, professor of obstetrics at the University of Rochester, addressed the Niagara County Medical Society on Nov 10 at Lockport, on "Caesarian Section, with Particular Reference to the Indications for its Performance."

Dr Francis C Goldsborough, professor of obstetrics at the University of Buffalo, led the discussion.

A subscription dinner was given for Drs Quigley and Goldsborough preceding the meeting.

Onondaga County

DR MORTIMER G BROWN was nominated for president of the Syracuse Academy of Medicine at a meeting in the University club Nov 17.

Other officers nominated are Vice-president, Dr David F Gillette, secretary, Dr Leon E Sutton, treasurer, Dr Foster C Ruhson, board of censors,

Dr Donald S Childs, Dr Carl E. Muench, Dr Brooks W McCuen, Dr E. S. Shepard and Dr P K Menzie, board of trustees, Dr Robert K. Brewer, Dr Herbert C Yeckel and Dr Floyd R. Parker.

Papers were read at the meeting by Dr Edward C Reifenshtein and Dr Tracy L Bryant.

THE WOMEN'S AUXILIARY to the Onondaga County Medical Society met on Nov 10 in the Nurses' Recreation Hall, University Hospital of the Good Shepherd. Dr Ferdinand Schoeneck spoke on "Maternal Welfare." A musical program and social hour followed.

A TESTIMONIAL DINNER to Dr Thomas H Halsted was given by the Syracuse Eye, Ear, Nose and Throat club of physicians on Nov 10.

Dr Halsted is retiring from active practice after forty-five years as a specialist of eye, ear, nose, and throat ailments. He was a pioneer in this field in Syracuse.

He was presented with a brief case by the club and in his response told of his reminiscences of professional life and training. Dr Halsted retires to become a representative of a New York City financial house.

Ontario County

"POST-GRADUATE STUDY" was the topic of a paper given by Dr A. W. Armstrong at a monthly meeting of the Canandaigua Medical Society on Nov 12. Dr J F McAmmond, of North Main Street, was host, dinner being served to 17.

Guests were Dr Hans Hansen and Dr Parker G Borden, of the Veterans' Hospital, and Dr J A. Crowther, of Honeoye. The meeting on Dec 10 was with Dr F C McClellan, North Main Street. Dr Robert M Ross, of Brigham Hall, read a paper on "Mental Aspects of the Average Patient."

Queens County

A JOINT MEETING of Medical Society of the County of Queens, Inc and Dental Profession of the County of Queens was held on November 30. The program

"The Relationship of Dentistry to Intra-oral Cancer"—By William J Hoffman, MD, Dir Tumor Clinic, Queens General Hospital, Adj Radiol, Lenox Hill Hospital.

"Medico-Dental Cooperation in Everyday Practice as Related to Office Practice."—By Louis I Abelson, DDS, Past President of the Allied Dental Council and of the Eastern Dental Society, Past Chairman of the Prosthodontia Section of the First District Dental Society.

Medicolegal

LORENZ J. BROSNAN, Esq.

Counsel, Medical Society of the State of New York

Physician and Patient—Fee of Consultant

A case recently decided by the Supreme Court of this State brought under consideration the question that arose when a consultant was called into a case by the physician in attendance and the claim was later made that the consultant was entitled to no fee on the grounds that he never was properly employed*.

The case arose out of the treatment of a small boy for mastoiditis. He had been under the care of a certain Dr. Y upon whose advice the father of the child engaged a Dr. H. T. to take over the care of the case. Dr. H. T. continued in charge for a period of weeks, and determined that an operation was necessary. That fact he communicated to both Dr. Y and the father. He also told Dr. Y that he felt unable to perform the operation himself, and suggested that his brother, Dr. G. T., with whom he engaged in a joint practice as partners, be called in. Thereupon at the request of Dr. Y, Dr. G. T. performed a single mastoid operation upon the patient. The usual hospital consent to the operation was signed by the parents before it was actually performed.

Thereafter, the two doctors, T., as partners rendered a bill to the child's father, and it being unpaid, suit was instituted to enforce its collection. The defendant claimed that he had never engaged Dr. G. T., the surgeon, to render any services to his son, and that he never even consented to an operation at his hands. He claimed he had engaged Dr. H. T. solely for that purpose.

The attorney for the plaintiffs made an application to the Court for summary judgment. Upon the hearing of the motion there was produced a letter signed by the defendant, dated some six months after the operation, addressed to "Dr. T." in which he stated he felt "terribly about not having taken care of your bill before," and that when business conditions improved he would "straighten up our affairs with you." Later defendant had written Dr. T. that on his return from a trip he had found certain letters from a collection agency concerning the account, and had ended his letter saying

"You can rest assured that you will be paid in full if you will be patient with me. I am enclosing a small check for \$50 which may help a little and I will try and gradually reduce the bill by sending you a small payment from time to time."

Upon the facts as outlined above presented in the form of pleadings and affidavits, the Court granted judgment in favor of the plaintiff doctors, and said in the course of his opinion

It is inconceivable that the defendant did not know what doctor was to perform the operation upon his son. It is inconceivable that he had no knowledge as to who was treating and caring for his son during the period of convalescence after such operation. Ordinary paternal interest would have compelled a father to ascertain these facts in the circumstances. The plaintiff, Dr. H. T. had attended the infant son. The plaintiff, Dr. G. T., had successfully performed a serious operation. The plaintiffs are partners in the practice of their profession. Had the services been performed without the consent or knowledge of the defendant, he would still be liable.

The Court in so ruling cited as authority an interesting case decided in the Courts of Pennsylvania nearly fifty years ago which is one of the few reported cases in which the Courts have written opinions on the subject of the right of a consultant to be paid in the absence of a specific understanding.

In that case* a claim was made by a physician against the estate of a decedent to recover a fee for services claimed to have been rendered during the last illness of S., the decedent. S. had been afflicted with a brain disorder and in the beginning of his illness consulted Dr. H. on various occasions, who examined and treated him and thereby became familiar with his case. When S. finally became acutely ill he was at a considerable distance from Dr. H. and was living alone, being attended by certain servants. His only relative, a sister was at the time travelling in Europe. A business associate of S. called in a Dr. F. to attend the sick man, who soon became paralyzed and his thought and speech became

*Tobey v. Nelson, 150 Misc. 346

*Matter of Sherman's Estate, 6 Penn. Co. Ct. Rep. 225

Distinguished associates of Dr Kline delivered eulogies. A plaque in appreciation of Dr Kline's services to the Nyack Hospital and the rest of the community will be mounted in the hospital. This tablet was purchased by subscription through the volunteer committee which arranged the testimonial dinner.

With Judge Patterson presiding, the speakers comprised Dr Gerrit F Blauvelt, dean of Rockland County physicians and honorary toastmaster, Dr S R Monteith, who spoke for the younger doctors, Robert Walmsley, chairman of Nyack Chapter, American Red Cross, Dr Samuel Brown, heart specialist, Dr George A Leitner and Judge Arthur S Tompkins.

St Lawrence County

THE ANNUAL MEETING of the St. Lawrence County Medical Society was held Nov 19 at the Seymour House at Ogdensburg.

The meeting was held in the afternoon, following a dinner at 12 30. The women received a special invitation to the meeting, to discuss plans for forming a women's auxiliary to the society.

The program included the president's address, "Reminiscences of the Medical Profession for the Past Fifty Years," by Dr Frank F Williams, Canton, the vice-president's address, "The Board of Supervisors and the Medical Profession," by Dr William H Mulholland Heuvelton, and a lecture, "Mid-Childhood Hip-Joint Disease," by Edward K. Cravener, Schenectady.

At the election of officers Dr S Pope Brown of Potsdam was elected vice-president to succeed Dr Mulholland who was named president to succeed Dr Williams. Dr Samuel W Close was re-elected secretary for the forty-ninth consecutive term.

Other officers named were Treasurer, Dr L T McNulty, censors, Drs P G Taddiken, F C Mason, and M J Stearns, delegate to the house of delegates for 1937-38, Dr W G Cooper, alternate, Dr F C Mason, delegate to the district branch, Dr R L Stacy, alternate, Dr S W Close.

Steuben County

DR. C M LAPP of Corning was elected president of the Steuben County Medical Society at its annual meeting on Nov 12 at the Salubria Inn near Bath.

Other officers elected were vice-president, Dr A E. Richmond, secretary and treasurer, Dr R J Shafer, censors, Dr Ernest Smith, Dr L A Thomas, Dr Stuart Bean, Dr M A. Place, delegate to the State

Medical Society for two years, Dr H. B. Smith.

The principal talk was given by Dr Lincoln of the Mt Morris Tuberculosis Sanatorium, who described improvement in control of tuberculosis.

The question of recommending hospitalization insurance came up at the meeting and the consensus was that most of the doctors of Steuben County favor the idea but feel that the movement should spring from the staffs of the hospitals which would be involved rather than from the Medical Society.

Tompkins County

"MEDICAL SOCIETIES MUST be constantly alert to the threat of a socialized profession," Dr Terry Townsend warned the Tompkins County Medical Society on Nov 19. "There is a growing structure of lay organizations designed to end individualistic medicine."

"Their tendency now is toward the institution of public health insurance. Community units must be prepared to counteract this tendency with a scheme of their own for the care of the sick in the lower income brackets."

Presence of Doctor Townsend, chairman of the state society's committee on trends, attracted a heavy attendance from Chemung, Tioga, Cortland, Seneca, and Schuyler Counties to the meeting, presided over by President Henry B Sutton. It was held in the Nurses Home at Memorial Hospital, Ithaca.

As an added speaker, President Sutton introduced Dwight S Anderson of New York City, director of the state society's bureau of public relations. He described the bureau's method for acquainting laymen with medical methods and progress through the dissemination of literature to hundreds of recognized periodicals.

Dr Joseph Lewis led a round table discussion of both speeches, presenting concrete methods by which it is possible to ward off the threat of state medicine and increase the flow of favorable publicity. The fifty-five members present closed their monthly meeting with a dinner.

Wayne County

DR. LUCIUS H SMITH, whom "nearly everyone in Palmyra regarded as a god-father," according to newspaper accounts, died at his daughter's home in Albany on Nov 18 of diabetes. He had retired last summer after half a century of practice. He was a leading figure in his county society.

Across the Desk

England Swimming in a Sea of Medicine

A LITTLE NEWSPAPER ITEM of only a dozen lines was handed to this scribe a few days ago by one of the leading men of the State Society on the trip to the meeting of medical editors and secretaries in Chicago. It was little, but told volumes. It reported, on the authority of Sir Kingsley Wood, British Minister of Health, that in twelve years the prescriptions issued in England and Wales have increased from 38,200,000 to 62,400,000, an increase mostly due, he said, to the growth of the "bottle habit."

From other sources we learn what the "bottle habit" is. Everybody who visits a doctor insists on having a bottle of medicine, which in England is supplied by the physician and so costs the patient nothing under their "panel system" of state medicine. On the shelf is a long row of bottles of staple compounds, and when the patient comes in he gets a brief once-over, or a sharp query, "What's the matter now, Jim?" down comes a bottle, with a rapid fire of instructions, and out goes Jim. An American physician visiting England not long ago questioned a couple of railroad workers about the panel system and found them enthusiastic about the marvelous efficiency of their doctor. He could put thirty patients through his office in sixty minutes. Could any American doctor beat that? And probably every one of them came out tightly grasping a bottle of medicine.

Medicine for the Mind

No doubt many of the patients had little or nothing the matter with them, and received harmless mixtures that satisfied their "bottle habit" and were chiefly of mental help. Every doctor has patients of that sort. An amusing incident of this kind is related by a veteran practitioner of Indianapolis, Dr. William N. Wishard, who tells some of his reminiscences in his state medical journal. He says

I recall many cases where a little understanding of the psychology of my patients has helped greatly. I happen to think of one just

now which is rather amusing. A little lad about seven years old complained to his mother that he was "car-sick" when he got on the train. They were starting to the Coast of Maine the next morning, and she appealed to me and said, "Is there something that can be done for him?" I asked to see the boy, and looked at his tongue, and then looked as wise as I was capable of looking and went over his chest, felt his pulse, and I said, "Yes." I took a long shot doing this. I knew there was a wrong psychological element in this case. He was traveling a good deal and had acquired the habit of getting sick when on the car. After making the necessary and apparently serious examination of the lad I went to the drugstore and got a couple of one-half grain tablets of methylen blue, and said to the boy's mother, "Give him one tablet tonight when he goes to bed." I impressed upon the young man's mind the fact that after he got up in the morning if the urine was blue and he would take the other tablet one-half hour before the train started he would not be car-sick at all. I learned that he ran to his mother in the morning and said, "Oh, Mother, it's blue, it's blue!" and then he watched the clock and anxiously awaited eight o'clock when he took the other tablet, and his mother wrote that when they reached their destination he had not been car-sick at all.

I recite that incident because it is suggestive of carefulness in judging as to what extent a patient's illness is influenced by his mental attitude. Sometimes, however, you may get tripped. You have to use a good deal of common sense and a good deal of careful thinking as to what kind of patient you are dealing with. You have got to know more than medicine in dealing with some patients.

What to Do When the Family Acts Up?

One time when you have "got to know more than medicine," too, is when you are dealing with the patient's family. This part of medical practice has been neglected by the schools, and suggests a new course that might be offered. How to treat the patient? Plenty of instruction there. How to handle the patient's family? Nothing at all! Yet just at a critical moment the relatives may come barging into the picture and start to upset everything. What is

so impaired that it was impossible for him to intelligently convey to Dr F his past symptoms. Dr F therefore proceeded by letter to obtain information and professional advice from Dr H with respect to the medical history of the patient and the form of treatment to be followed. The patient, however, died from the illness.

After death Dr H made a claim for compensation which the Court allowed on the theory that a principal will be bound "by the acts of a self-constituted agent where his own neglect or the act of God has rendered those acts necessary for his self-preservation or for the well-being of society." The Court in so ruling made the following pertinent observations:

The spirit in which this rule is to be expounded should be in unison with the character of the relations which the parties have themselves established with each other, and should be liberal just in proportion as those relations become more intimate and involve delicate questions of duty and responsibility. To say that the discretion to act promptly in an emergency, which a patient necessarily gives to his physician, is larger than that which a merchant gives to his drayman, is simply to say that a man will resign more of his own authority to the will of the person who is to save his life, than to that of the person who is to take care of his trunks. The trust, which includes the power for its exercise with which the patient vests his physician, is often practically unlimited, because it may require to be executed at a time when disease has taken away all ability to restrict it. The patient is not to be left to die, on the plea that during such an interval, no act of his adviser can be valid, for want of his direct approval. Or, the doctor may suspect the presence of an obscure disease, which if it exists, demands heroic treatment. To communicate the suspicion to the sick man will probably finish him on the spot, may he not solve the doubt by consulting a specialist?

Mass on Tongue

A physician who specialized in the treatment of cancer was consulted by a young man with reference to complaints of a mass which had developed on his tongue. Examination showed that he had on the midline of the dorsum of his tongue a hard, raised but not definitely ulcerated mass approximately seven by fifteen mm surrounded by a reddened area. The doctor took a biopsy and the pathological report was as follows: "Thickened epithelium with slight down growth. No definite evidence of carcinoma." The doctor also took blood from the patient for a Wassermann test and received a negative report. When the patient returned a

week later the doctor explained the reports to him and suggested Radon treatment as he feared that in spite of the reports the patient might be developing a cancer. The same day he implanted two Radon seeds in the mass and sent the patient home with the seeds so imbedded. The patient was instructed to return to the doctor in a week. He never returned for treatment and was never seen by the doctor subsequent to that time.

The next time the doctor heard from the patient was when a malpractice action was instituted against him in which the charge was made that the doctor had been negligent in his administration of Radon. It was claimed that the implantation of the Radon seeds caused the tongue to be severely eroded so as to destroy a portion of the tissues about the size of a quarter.

The action was never brought on for trial by the plaintiff's attorney and an application was duly made to the Court on behalf of the defendant doctor for an order dismissing the action for failure to prosecute. Before the said motion could be argued, the plaintiff consented to discontinue the action against the doctor.

Treatment of Neuritis

A physician engaged principally as a specialist in roentgenology was consulted by a woman with complaints of pains and aches in the right side of her neck, shoulder, and right arm which she stated had been of several months duration. The doctor, after examination, made a diagnosis of neuritis. He found evidence of pain and tenderness on pressure over the shoulder and upon motion of the arm and shoulder. He advised treatment by the application of a high frequency current and administered five such treatments to the patient. Each of said treatments was of ten minutes duration and administered by a high frequency tube of the neck and applicator type.

Although the patient was to receive further treatments, after the fifth treatment she failed to appear at the doctor's office, and hearing nothing from her for sometime he instituted action against her to recover his fee for professional services rendered. The patient undertook to resist the doctor's action by interposing a counterclaim charging him with malpractice in the treatment which he had given her. However, when the case came on for trial, a conference before the trial judge resulted in a withdrawal of the counterclaim and in a judgment in favor of the doctor in the full amount of his bill.

aware of the altered emphasis of illness. Have we not insisted too strongly that only such pathology as can be heard or felt, or tested and measured in the laboratory, is true pathology? Have we not specialized our observations so intently that we do not see the organism because of the organs? Have we not institutionalized medical practice to such a degree that we think more of the disease than we do of the man as an individual and as a member of a social group? An affirmative answer, I believe, should be given to each of these questions?

He cited further the vogue of mental healers as proof that people are growing more

emotional and more overstrained nervously. At the same time we live in an age of high-speed and delicate machinery, where nerves awry can play havoc, and even plunge nations into catastrophic conflicts and crash civilization into chaos, as Lord Horder hints. No greater crisis has ever faced a distraught world. Never has the skill of wise physicians been more imperatively needed. If the profession can help keep America sane in a wild world that makes Bedlam seem like a rest cure, it will, as the Romans used to say "deserve well of the Republic."

MEDICOLEGAL ASPECT OF ARTIFICIAL INSEMINATION

The question of the legitimacy of a child born in wedlock, as a result of artificial insemination from a donor other than the father, has not been brought to trial as yet. It is with this in mind that Frances I Seymour and Alfred Koerner, New York (*Journal A M A*, Nov 7, 1936), present their discussion in the hope of answering some of the many questions asked by physicians.

First, the question of the legality of the mother's position is discussed. Adultery, by the New York State law, is defined as "the physical relationship between a woman or man with a partner other than the legal mate." This interpretation automatically dispenses with any such question in a case of artificial insemination. However, it has been found necessary and advisable to insist that the woman's husband be made to give a written consent that his wife be inseminated. The authors use a specific form. The signatures of both the husband and wife are affixed to the document and sworn to before a notary. The consent sheet is signed in duplicate, notarized and witnessed. These consent blanks are then separated and placed respectively in the vaults of separate banks and forgotten unless a legal complication should arise.

These consents legitimize the child under the present New York laws and establish it as the legal heir of the family unit. It also acts as mental binder on the husband in that he knows he can never deny having authorized the creation of his wife's child. There is little likelihood of the

mother's ever bringing suit except in the event of cross-insemination when the surgeon allowed the identity of the donor to become known.

Possibilities of blackmail by the donor can be eliminated by having him deliver his specimen at a different address or apartment or at a different time than the arrival of the patient. Another simple method is to keep the two hospitalized during the period. It eliminates the question of possibility of blackmail by the donor. He has no possible way of knowing who the recipients are and no one can learn the identity of the donor.

It is preferable that the donor be married, as it eliminates a tendency to promiscuity. However, notarized permission from the legal wife stating that her husband may participate in this scientific venture is essential. Such a venture on the part of a husband may be a violation of the laws against adultery. Therefore, as in New York State, if the wife is cognizant of the condition and has so signified in writing, she is unable to obtain a divorce on these grounds, as condoned adultery nullifies grounds for divorce.

Another phase to the question arises when the sterile husband asks to have a relative be the donor. This should never be consented to. In selecting a donor, it would be well to choose one whose blood group corresponds with that of the husband. A child born in wedlock is the legal heir unless his paternity is disproved and a "final adjudication is handed down by a court."

indicated then? A war-club or a battle-axe? Many a harried medical man would like to have one handy

It is chiefly when a diagnosis of psychosis is made that the family begin to act up, says a New Orleans physician, Dr L. L. Cazenavette, in a paper read before his state medical society. The first mistaken idea that crosses the family brain is that mental disorder is always hereditary. Therefore such a diagnosis is, first, a reflection on their ancestors, and secondly, and worse yet, a suggestion that the whole family may be slightly cracked. Perhaps it is no wonder that a fight is put up by the sisters and the cousins and the aunts, not to mention the mothers and brothers and the others

Well, let us suppose that the doctor has finally convinced the embattled family that his diagnosis is correct, then the questions arise, what to do for the patient and what to do with the patient. Just let the doctor suggest a mental hospital, and the battle is on again, more violent and furious than before. If the patient is in a depressed state, a "tonic" to elevate him to a higher plane is suggested, if he is excited and restless, a "quieting" drug is declared the thing. The doctor is asked to give a drug to put the patient to sleep, with the naive assurance that all the patient needs is rest, and "after a good rest he will be all right again"

Delusions About Dementia

The panic of the family, while unreasonable, is at the same time explicable. Visions of straitjackets and padded cells rise before their imaginations, the medieval conviction that the demented were possessed by demons floats in the back areas of their consciousness, the horrid thought of an ineradicable stigma on the family burns like a branding iron, erroneous ideas of the "madhouse" as a screaming Bedlam inflame the family fears. As a matter of fact, cases sometimes occur called "reactive psychosis," where mothers or sisters lose their own mental balance in their upset over the dementia of those they love. It is recommended, to avoid exciting the relatives, that even the word "dementia" be avoided in favor of milder terms or words like "schizophrenia," which they never heard before.

They should also be assured that mental illness often has nothing to do with heredity

Dr Cazenavette recalls that Rosenau presents as physical causes of mental disorders the infectious diseases, syphilis, typhoid, influenza, scarlet fever, septicemia, acute and chronic poisoning from drugs, alcohol, endogenous poisoning from nephritis, heart disease, and diabetes, disease of the thyroid and head injuries. Other forms of insanity result from inherent abnormal mental make up of the patient, others from vascular changes incident to advanced age. It should not be considered a disgrace to have a member of one's family so afflicted. Such conditions may arise in otherwise perfect ancestry

And what is more, the records of our mental hospitals show a high rate of patients discharged as cured, and the family may be encouraged to expect the patient home soon, restored to normal, and all local gossips and critics silenced and confounded

The European Madhouse

If all madmen are sent to the madhouse, who would be left, in Europe at least, to act as keepers? Lord Horder, our honored guest last spring, said the other day in an address in Edinburgh that "we should preserve our mental poise while large sections of humanity are losing it." Mental poise may save civilization, he added, "but if we develop national hysteria or national hypochondriasis, this unique opportunity will be lost forever." As we survey the European scene, it must be said that national hysteria seems spreading so rapidly as to be getting almost beyond control

Is it due to the overstrain of modern life and its nervous excitations? Dr Walter B. Cannon, of the Harvard Medical School, based his convocation oration before the American College of Physicians in Detroit last spring on the fact that "in modern life infections have diminished and nervous strains have increased." He added

The nervous system is all-pervasive. It can have effects in remote and secluded portions of the body, far from any obvious lesion. Because it is universal in its effects, disorders which involve the nervous system require consideration of the organism as a whole. But well-nigh all diseases involve the nervous system, because they arouse fears and anxieties and worries, and these feelings are expressed in demonstrable bodily effects.

I have questioned whether we as members of the medical profession have been sufficiently

author believes that only one per cent of the total cases has surgery indicated because of failure of good medical treatment after a period of five to six months

The medical treatment advocates early diagnosis, individualization, complete co-operation of the patient, removal of foci of infection, high caloric diet, improved general hygiene, psychotherapy and under medication, quinine, iodine, eserine (physostigmine), adrenal cortical substance, barbiturates, ovarian substances, and insulin

This text is an abrupt disagreement with the usual teaching that surgery is the solution in Graves' disease. Because of this, there is much to command the attention of the internist

PAUL C ESCHWEILER

Diseases of the Nose, Throat and Ear for Practitioners and Students Edited by A Logan Turner, M D Fourth edition, revised and enlarged Octavo of 473 pages, illustrated Baltimore, William Wood and Company, 1936 Cloth, \$6.00

This is a revised and enlarged edition of the already very acceptable book created by an Edinburgh group and edited by A Logan Turner It is designed for students and practitioners, and is readily understandable

Many of the illustrations are schematic rather than anatomic but are correct in detail and proportion, and perhaps illustrate better the points to be made For this reason, and because anatomic as well as most other descriptions, are stated simply in plain language, the volume is a practical one of modest size for reference and for students Lengthy detail is not entered into, much to the credit of the authors, but treatment of each subject is adequate and almost everything of importance is covered at least in a brief way

There are no specially noteworthy features—it is just a good dependable book on the Ear, Nose and Throat and considerable peroral endoscopy

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To this reviewer, it seems as if we have in this volume the most up-to-date and inclusive reference text on diseases of the eye, and he ventures the prediction that it will be recognized, for some time to come, as the standard

To the editor is due a great deal of praise for an outstanding work

CHARLES A HARGITT

Pathological Physiology and Clinical Description of the Anemias By William B Castle, M D and George R Minot, M D Edited by Henry A Christian, M D Octavo of 205 pages New York, Oxford University Press, 1936 Cloth, \$3.00

A glance at the authors' names, of course insures this to be an authoritative discussion of the subject.

In the introduction, it is stated that anemia, to produce symptoms in a moderately active individual, requires that the values for the concentration of the red cells or hemoglobin be reduced about one-half. When the blood loss is rapid, as from hemorrhage, a considerably smaller loss may produce serious signs. A gradual reduction may proceed to quite an extreme degree without symptoms, especially when the patient is resting in bed.

Pallor does not always denote anemia, as all have noted, but may be due, the authors state, to constriction of the peripheral vessels as in fainting, or increase of fluid in the tissues, as in myxedema or nephritis. Patients with lesser grades or even more marked anemia may not appear pale, because of dilatation of the peripheral vessels, the pink cheeked anemia, ("anemia rubra," Osler)

A comprehensive classification of the anemias is presented. Among the rarer types, the macrocytic anemia which may occur in pellagra is discussed, as is sometimes seen in individuals subject to chronic alcoholism or gastro-intestinal disorders, probably due to deficiency of vitamin B

With regard to treatment, attention is called to the necessity of establishing a diagnosis before, and not after, the blood picture has been obscured by indiscriminate therapy. Transfusion is believed to be only rarely indicated in pernicious anemia because improvement will usually begin

Books

Books for review should be sent directly to the Book Review Department at 1313 Bedford Avenue, Brooklyn N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers

RECEIVED

Urology By Edward L Keyes, F A C S & Russell S Ferguson, M D Sixth edition Quarto of 707 pages, illustrated New York, D Appleton-Century Company, 1936 Cloth, \$10 00

New and Nonofficial Remedies, 1936 Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1936 Duodecimo of 542 pages Chicago, American Medical Association 1936

Keeping Your Child Normal Suggestions for Parents, Teachers and Physicians with a Critical Estimate of the Influence of Psychoanalysis By Bernard Sachs, M D Duodecimo of 148 pages New York, Paul B Hoeber, Inc, 1936 Cloth, \$1 50

The Legal Aspects of Milk Control By James A Tobey, Dr P H Octavo of 102 pages Chicago, International Association of Milk Dealers, 1936 Cloth

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1935 with the Comments That Have Appeared in the Journal Duodecimo of 139 pages Chicago, American Medical Association, 1935

Treatment in Psychiatry By Oskar Diethelm, M D Octavo of 476 pages New York, The Macmillan Company, 1936 Cloth, \$4 00

British Masters of Medicine Edited by Sir D'Arcy Power, F R C S Octavo of 242 pages illustrated Baltimore, William Wood and Company, 1936 Cloth, \$3 00

Bailey's Text book of Histology (Elwyn and Strong) Ninth edition, revised and rewritten Octavo of 773 pages, illustrated Baltimore, William Wood & Company, 1936 Cloth, \$6 00

Text-book of Pathology By Sir Robert Muir, M D Fourth edition Octavo of 994 pages, illustrated Baltimore, William Wood & Company, 1936 Cloth, \$10 00

A Practical Medical Dictionary By Thomas L Stedman, M D Thirteenth, revised edition with the New British Anatomical Nomenclature Octavo of 1291 pages, illustrated. Baltimore, William Wood and Company, 1936 Cloth, \$7 00, \$7 50 with thumb index.

Practical Examination of Personality and Behavior Disorders Adults and Children By Kenneth E Appel, M D & Edward A Strecker, M D Octavo of 219 pages New York, The Macmillan Company, 1936 Cloth, \$2 00

Medical Classics Volume 1, Number 1, September 1936 Compiled by Emerson Crosby Kelly, M D Quarto of 78 pages, illustrated Baltimore, Williams & Wilkins Company, 1936 Paper

The Practice of Medicine By Jonathan C Meakins, M D Quarto of 1343 pages, illustrated St Louis, The C V Mosby Company, 1936 Cloth, \$10 00

Urological Roentgenology A Manual for Students and Practitioners By Miley B Wesson, M D & Howard E Ruggles, M D Octavo of 269 pages, illustrated Philadelphia, Lea & Febiger, 1936 Cloth, \$5 00

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As a service exclusive to our readers books published in this country may be ordered through the Business and Editorial Offices of the Journal (33 W 42nd St., N Y C) postage prepaid. Order must be accompanied by remittance covering published price.

REVIEWS

The Normal Diet and Healthful Living By W D Sansum, M D, R. A. Hare, M D, and Ruth Bowden, B S Octavo of 243 pages New York. The Macmillan Company, 1936 Cloth, \$2 00

The author has accurately recorded for the layman a simple description of metabolic processes and the physiology of digestion. This is followed by chapters on allergy, obesity, undernutrition and hygiene. The book contains a good compilation of menu plans

WILLIAM S COLLENS

Exophthalmic Goiter and Its Medical Treatment By Israel Bram, M D Second edition Octavo of 456 pages, illustrated St. Louis, C V Mosby Company, 1936 Cloth, \$6 00

This book presents the author's views on the medical treatment of Graves' disease. His text is based on the theme that "al-operate with the properly equipped internist get well" Conversely, that thyroidectomy is only indicated in a little over two per cent of all cases of Graves' disease. The

author believes that only one per cent of the total cases has surgery indicated because of failure of good medical treatment after a period of five to six months

The medical treatment advocates early diagnosis, individualization, complete co-operation of the patient, removal of foci of infection, high caloric diet, improved general hygiene, psychotherapy and under medication, quinine, iodine, eserine (physostigmine), adrenal cortical substance, barbiturates, ovarian substances, and insulin

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about two days after parenteral therapy with liver extract is begun

The potency of parenterally administered liver extract is found to be at least sixty times that of the oral. For oral administration, combinations of liver and gastric tissue are said to be the most concentrated sources of active material

It is convenient to have this section of the Oxford Medicine separately bound

W. E. McCOLLOM

Minor Surgery By Frederick Christopher, M.D. Third edition, reset. Octavo of 1030 pages, illustrated. Philadelphia, W. B. Saunders Company, 1936. Cloth, \$10.00

The present 1936 edition is the third since 1929 and is a much larger volume containing 1030 pages with 709 illustrations

The book has been brought up to date, and the author has been able to determine the dividing line between major and minor surgery

His presentation of the manner of treatment of injuries and minor surgical ailments involving any or all parts of the body, is complete and clearly illustrated, and is not to be found in many volumes on general surgery

The book is excellently adapted to meet the needs of the intern and the many physicians who for some years have been detached from surgical contacts

RALPH F. HARLOE

Parenteral Therapy A Ready Reference Manual of Extra-Oral Medication for Physicians, Dentists, Pharmacists, Chemists, Biologists, Nurses, Medical Students and Veterinarians. By Walter F. Dutton, M.D. and George B. Lake, M.D. Quarto of 386 pages, illustrated. Springfield, Charles C. Thomas, 1936. Cloth, \$7.50

The administration of medicaments by all methods except by the alimentary route is described in technical detail in this useful volume. The introduction, after a discussion of parenteral therapy in general, furnishes a list of the normal standards of the various blood chemical values. General technical methods are then described, especially the description, selection and care of various types of syringes and needles. The most desirable gage, length and type of needle for different procedures is shown in tabular form. The authors then go on to describe the proper procedures in intradermal, hypodermic, intramuscular and intravenous injections

Blood transfusion, artificial pneumothorax, intraspinal serum injections, cysternal and intraventricular puncture are described, also intravenous and infiltration anesthesia, caudal, epidural and spinal

anesthesia. The injection treatment of hernia, hydrocele, varicose veins and a chapter on ionic medication will also be found. The last half of the book includes a therapeutic index and pharmacologic notes

Many practitioners will find it a convenient volume to have.

W. E. McCOLLOM

Your Breath and Your Health. By Louis M. Pearlman, M.D. Octavo of 128 pages, illustrated. New York, Academy Publishing Company, 1936. Cloth, \$1.00

This work is divided into three parts. The first part is devoted to general consideration of the anatomy and physiology of the circulation and respiratory systems

The second part takes in the local causes of bad breath, stressing chiefly, foods, dental conditions, diseased tonsils and sinus disease and the part played by each in the production of bad breath

The third part is devoted to systemic causes of bad breath

This volume is intended for the education of the intelligent layman. The subject is treated simply yet thoroughly. The illustrations are instructive and clear. Some popular fallacies are dispelled and the information is easily assimilable, there being an ample glossary appended

SAMUEL ZWERLING

Urology in Women A Handbook of Urinary Diseases in the Female Sex. By E. Catherine Lewis, M.S. Second Edition. Octavo of 100 pages, illustrated. Baltimore, William Wood and Company, 1936. Cloth, \$2.25

This little handbook comprises one hundred pages covering urological lesions of the female urethra, bladder, ureter and kidney considered in this order. Venereal diseases are purposely omitted. The text is authoritative, concise and well-written and is fully illustrated. Only selected salient data in diagnosis and treatment are given. A limited number of references appear in each chapter

The author deserves special commendation for contributing such an excellent clinical compendium which should prove of interest and value to urologist, gynecologist and practitioner

AUGUSTUS HARRIS

Post-Graduate Surgery Edited by Rodney Maingot, F.R.C.S. Volume II. Quarto, illustrated. New York, D. Appleton-Century Company, 1936. Cloth, \$45.00 for set of three volumes

In Volume II of this work there are ten chapters devoted to surgery of head, spinal column and salivary glands, neck, breast, thorax, female genital organs, urinary sys-

tem and male genital organs, sympathetic nervous system, adrenal gland, injection therapy, and infections of the hand. There are 1134 figures in the text. The volume comprises 1825 pages, including a comprehensive index. As in the first volume, the various chapters have been written by surgeons particularly interested and experienced in the subject matter which they are presenting. The drawings, illustrations and plates add greatly to the clearness of the text. The latter is in general briefer than might be desired as regards the clinical and pathological aspects of the various conditions described but inasmuch as the volume in general has been written for the advanced surgeon rather than the student, the technical procedures, operative measures and mechanical therapeutic treatment are rather fully considered and fairly comprehensive. The volume is therefore more useful to the surgeon of experience, to acquaint him with the operative practices of his English colleagues and is interesting from this point of view. However, limited references are made to the surgical contributions of foreign countries and references in the text are extremely limited and the chapters are practically without bibliography. This is unfortunate particularly for anyone who would wish to know more fully the contributions of other than the English surgeons. Accordingly, the volume is not adapted to the more particular needs of the junior student in surgery. The volume is recommended to post-graduate surgeons in accordance with the points above mentioned.

EMIL GOETSCH

The Extra-Ocular Muscles. A Clinical Study of Normal and Abnormal Ocular Motility. By Luther C. Peter, M.D. Second edition. Octavo of 351 pages, illustrated. Philadelphia, Lea & Febiger, 1936. Cloth, \$4.50.

The teaching of ophthalmology has changed a great deal in the past few years and the approach to the specialty is more formal and left less to the individual to decide how he shall go about it. Post-graduate courses are given in several large cities extending over many months, and eye hospitals everywhere conduct courses on various subjects for their internes.

Improved technique in muscle surgery and more scientific study of binocular vision, "amblyopia exanopsia," suppression of images and orthoptic training has awakened a strong interest in this particular branch of ophthalmology.

For both the beginner and the practitioner Dr. Peter's book will be of interest and a great help. The reader is never carried too far into debatable territory and if there is a doubtful position beyond which we

cannot go at present, the attitude of the author is always conservative. It would seem that the publishers could not have selected a more opportune moment for its appearance.

RALPH LLOYD

Animal Micrology. Practical exercises in Zoological Micro-Technique. By Michael F. Guyer. Fourth Revised Edition. Octavo of 331 pages, illustrated. Chicago. The University of Chicago Press, 1936. Cloth, \$2.50.

Six years have elapsed since the last edition of this practical textbook, guide, and reference manual. A few minor additions and special techniques appear, and a new chapter explaining the dioxan method for histological preparations is a distinct contribution. It should popularize this technic in the United States, and certainly better elaborates the method than Shenan's recent text. This standard volume with its wealth of material is essential to all tissue laboratory workers.

IRVING M. DERBY

The Surgical Clinics of North America. Volume 16, number 1, February, 1936 (Chicago number). Published every other month by the W. B. Saunders Company, Philadelphia & London. Per Clinic Year (6 issues). Cloth, \$16.00, Paper, \$12.00.

The February issue of this publication illustrates the work at the Chicago Clinics. Part of the volume is devoted to a symposium on cancer of the cervix and is a very complete treatise on the subject.

An interesting article by Dr. Lewin deals with Manipulative Surgery and in its clear cut presentation clarifies a number of obscure points in this important and neglected chapter of orthopedics.

A large number of other stimulating articles make this issue an important one of the series.

GEORGE WEBB

To Raise These Hairs. By Fred Rothermell. Octavo of 350 pages. New York, Lee Furman, Inc., 1936. Cloth, \$2.50.

A country doctor comes to New York and has a hard, but soul satisfying time in general practice. His no good wife finally leaves him to his own resources and he muddles through fairly well until he is arrested and tried for inducing an abortion not for money but out of sympathy. The book is full of medical words, many of them queer like "exploded aneurysm, cranium forceps and septemia." The technique of abortion is described in detail. Much vulgar talk and strained realism like this description of a prenatal examination "Naked to the hips has abdomen a hard yellow hydro-cephaloid head with one eye and a beard of tangled red hair."

"Pure fiction"

CHARLES A. GORDON

Chemical Procedures for Clinical Laboratories By Marjorie R. Mattice, A B Octavo of 520 pages, illustrated Philadelphia, Lea & Febiger, 1936 Cloth, \$6 50

This is a well organized and clearly written text. The author very wisely includes in this volume of 520 pages not only the latest analytical methods, but also procedures for obtaining material. Internes should find this inclusion very valuable. A fair portion of the book is devoted to well described methods of preparation of reagents.

While the author has intended this volume to be a laboratory guide and not a reference book this reviewer feels that where she has cited an author as a reference, such a reference should be complete, as it is with some, and not cite merely the name and date. However, this is a minor criticism of a book that should prove to be an asset in any laboratory where biochemical assays are being attempted.

MORRIS L. RAKIETEN

Principles and Practice of Recreational Therapy for the Mentally Ill By John E. Davis, B A Octavo of 206 pages New York, A S Barnes & Company, 1936 Cloth, \$3 00

Workers for rehabilitation of mentally ill know the distinct importance of recreational therapy. Application of this knowledge has been hampered considerably by lack of any complete working formulary. The authors, from a large experience, have provided for that deficiency in this original work, the first to present in concise form definitely detailed information and procedures for therapists, and for the medical administrator. Theoretical material has been furnished for proper understanding of the practical matter, which is maximal throughout. Beyond direct therapeutic principles furnished, systems of organization and administration as well as a course of instruction for personnel have been indicated. It is a publication not only important for the student therapist and practicing technician but particularly useful to physicians treating institutionalized mental cases.

IRVING M. DERBY

The Relief of Pain. A Handbook of Modern Analgesia By Harold Balme, M D Octavo of 392 pages Philadelphia, P Blakiston's Son & Company 1936 Cloth, \$4 00

"It is a successful attempt to assemble and evaluate the factors determining the alleviation and prevention of physical pain" (From the Introduction by Farquhar Buzzard, Regius Prof Med Oxon) The

author's intent is to use pain in the discovery of the processes of disease, and to advertise the most efficacious remedies to combat it. General anesthesia is not included since its application is to the emergencies of acute pain. The book is a research into Analgesia.

It is a recent composition, a comprehensive study, and generously critical, it is well arranged as to fact and easily read as to form. Operations are not decried by any means, nor is general anesthesia belittled, neither are drugless methods overemphasized. If opium is, maybe, somewhat slighted in a surplusage of milder drugs, it is because the author's loadstar is the search for the best treatment adapted to the particular call for relief from the pain of a well diagnosed pathological process.

To a list of seventy-five analgesic drugs are added the trade name with the manufacturer, the composition, therapeutic use, and the dosage. "Those of the British Pharmacopeia are not given in detail as their composition and action are so well known." We find Aspirin, Cibalgin (Ciba), Combral (Bayer), Dilaudid (Knoll), Larocain (Roche), Luminal (Bayer), Vegamin (Warner), a dozen or more liniments. It would be interesting to have the list reviewed by the Council on Pharmacy and Chemistry. Not the least inviting chapters are those of part IV. The 29th dealing with Rest and Posture, the 30th—Baths and Packs, and the 31st—given in quite some detail to Movements, Massage and Electrical Treatment. The two latter are written by Matthew B Ray, D S O, M D, M R C P. Better read the book. It is suggestive, anyway. It could provoke profitable self-criticism.

A. F. ERDMANN

Lectures on Diseases of Children. By Robert Hutchison, M D. Seventh edition. Octavo of 452 pages, illustrated. Baltimore, William Wood & Company 1936 Cloth, \$6 75.

The scope of this volume consists of the complete series of clinical lectures given by Dr Hutchison as a systematic course at the London Hospital. These classical lectures are not intended as an exhaustive treatise on the diseases of childhood, but rather take the form of clear presentations of the author's rich experiences as a pioneer in his specialty. Many of his views are not modern, and the author does not expect the reader to consider them so. The student and experienced pediatrician may both benefit from reading Dr Hutchison's seasoned opinions and views, so clearly set forth in this book.

LEWIS A. KOCH

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Chemical Procedures for Clinical Laboratories By Marjorie R. Mattice, A B Octavo of 520 pages, illustrated Philadelphia, Lea & Febiger, 1936 Cloth, \$6 50

This is a well organized and clearly written text. The author very wisely includes in this volume of 520 pages not only the latest analytical methods, but also procedures for obtaining material. Internes should find this inclusion very valuable. A fair portion of the book is devoted to well described methods of preparation of reagents.

While the author has intended this volume to be a laboratory guide and not a reference book this reviewer feels that where she has cited an author as a reference, such a reference should be complete, as it is with some, and not cite merely the name and date. However, this is a minor criticism of a book that should prove to be an asset in any laboratory where biochemical assays are being attempted.

MORRIS L RAKIETEN

Principles and Practice of Recreational Therapy for the Mentally Ill By John E Davis, B A Octavo of 206 pages New York, A. S. Barnes & Company, 1936 Cloth, \$3 00

Workers for rehabilitation of mentally ill know the distinct importance of recreational therapy. Application of this knowledge has been hampered considerably by lack of any complete working formulary. The authors, from a large experience, have provided for that deficiency in this original work, the first to present in concise form definitely detailed information and procedures for therapists, and for the medical administrator. Theoretical material has been furnished for proper understanding of the practical matter, which is maximal throughout. Beyond direct therapeutic principles furnished, systems of organization and administration as well as a course of instruction for personnel have been indicated. It is a publication not only important for the student therapist and practicing technician but particularly useful to physicians treating institutionalized mental cases.

IRVING M. DERBY

The Relief of Pain. A Handbook of Modern Analgesia By Harold Balme, M D Octavo of 392 pages Philadelphia, P. Blakiston's Son & Company 1936 Cloth, \$4 00

"It is a successful attempt to assemble and evaluate the factors determining the alleviation and prevention of physical pain" (From the Introduction by Farquhar Buzzard, Regius Prof. Med. Oxon.) The

author's intent is to use pain in the discovery of the processes of disease, and to advertise the most efficacious remedies to combat it. General anesthesia is not included since its application is to the emergencies of acute pain. The book is a research into Analgesia.

It is a recent composition, a comprehensive study, and generously critical, it is well arranged as to fact and easily read as to form. Operations are not decried by any means, nor is general anesthesia belittled, neither are drugless methods overemphasized. If opium is, maybe, somewhat slighted in a surplusage of milder drugs, it is because the author's loadstar is the search for the best treatment adapted to the particular call for relief from the pain of a well diagnosed pathological process.

To a list of seventy-five analgesic drugs are added the trade name with the manufacturer, the composition, therapeutic use, and the dosage. "Those of the British Pharmacopoeia are not given in detail as their composition and action are so well known." We find Aspirin, Cibalgm (Ciba), Compral (Bayer), Dilaudid (Knoll), Larocain (Roche), Luminal (Bayer), Vegamin (Warner), a dozen or more liniments. It would be interesting to have the list reviewed by the Council on Pharmacy and Chemistry. Not the least inviting chapters are those of part IV. The 29th dealing with Rest and Posture, the 30th—Baths and Packs, and the 31st—given in quite some detail to Movements, Massage and Electrical Treatment. The two latter are written by Matthew B. Ray, D S O, M D, M R C P. Better read the book. It is suggestive, anyway. It could provoke profitable self-criticism.

A. F. ERDMANN

Lectures on Diseases of Children. By Robert Hutchison, M D. Seventh edition Octavo of 452 pages, illustrated. Baltimore, William Wood & Company 1936 Cloth, \$6 75

The scope of this volume consists of the complete series of clinical lectures given by Dr. Hutchison as a systematic course at the London Hospital. These classical lectures are not intended as an exhaustive treatise on the diseases of childhood, but rather take the form of clear presentations of the author's rich experiences as a pioneer in his specialty. Many of his views are not modern, and the author does not expect the reader to consider them so. The student and experienced pediatrician may both benefit from reading Dr. Hutchison's seasoned opinions and views, so clearly set forth in this book.

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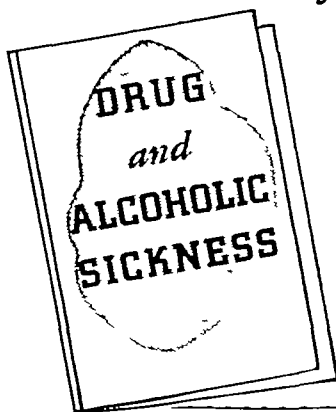
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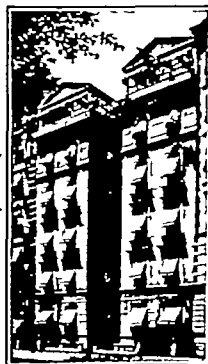
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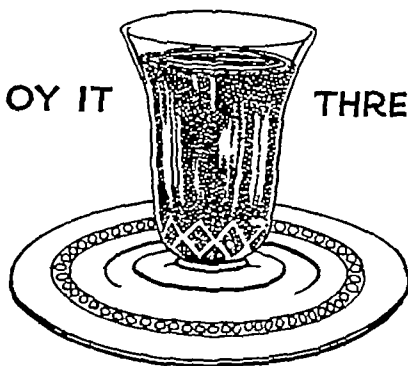
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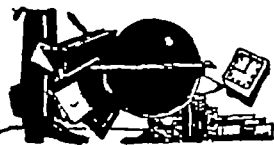
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Another student activity is the school paper or magazine. Many a successful writer has made the start on a school publication. For that matter, however, everyone, even in the most every-day business life, has more or less writing to do, and work on the student periodicals in school and college, gives ease, fluency, and facility in handling our sometimes rather balky language. The pleasure of being able to dash off a rattling good story or a humorous or serious bit of verse is also one of the joys that help make life worth while.

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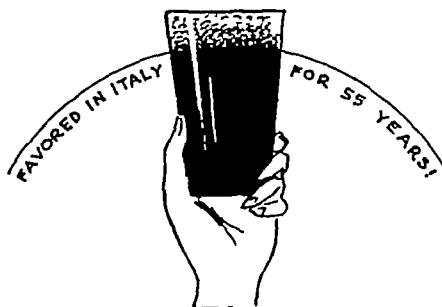
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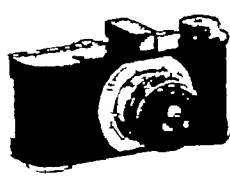
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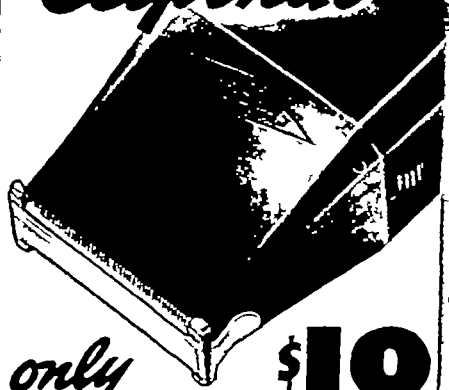
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If given cold cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any "taste" is largely a metallic one from the silver or silverplated spoon (particularly if the plating is worn) a glass spoon has an advantage.

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Travel and Resorts

Lone Survivor Rescued by Steamer—but Saved by Chief Surgeon

Dr Kort Zinner, chief surgeon of the *SS Westernland*, told an amazing story of how the seventeen year old cabin boy, Fritz Roethke, sole survivor of the *Isis* was resuscitated.

Fritz Roethke was found in a lifeboat in an unconscious and utterly exhausted condition after having spent thirteen hours in an open lifeboat without food or water. Dr Zinner stated that the young boy had no pulse action and that he had inhaled a quantity of salt water and was on the point of death. Dr Zinner states that the salt water was pumped gradually from the boy's stomach and at the same time warm blankets and hot water bottles were applied together with heart stimulants. It was not until six hours after he was rescued that there were any signs of recovery and his temperature was then still subnormal. The physician never left the boy's side for twenty-four hours and was finally compelled to use an electric ray treatment.

When the *Westernland* reached Antwerp the boy was still too weak to tell his story but he was beginning to recover some of his strength by that time. Needless to say the lad's parents and many others have poured congratulations upon the Captain of the *Westernland*, Captain Kahlbetzer, the boatswain who went overboard after the boy and the doctor who saved his life. The *Isis*, a modern, motor-propelled freighter of 4,454 tons, built in 1922, sailed from Hamburg bound for Philadelphia and Gulf of Mexico ports. During the season's worst storms, an SOS was flashed three times from the little German freighter as she floundered in distress in mountainous seas off Land's End, England.

The *Westernland* arrived at the scene at dusk and all through the night while she plunged and rolled all but helpless, her searchlights fingered through the rain and spray. Late in the morning she picked up the one survivor, and



The three principals in the thrilling rescue of a lone survivor of the ill-fated Isis—(left to right) Boatswain Frantz Beyer who brought the victim aboard, Captain Kahlbetzer who supervised the rescue and Chief Surgeon Kort Zinner who saved the shipwreck's life.

finally had to abandon hope of finding any of the remaining thirty-nine members of the ill-fated crew.

The first call for aid picked up by a Dutch tug said that a hatch was stove in and her holds were filling rapidly. A little later a message stated that the fore-castle head was under water and that the crew was preparing to abandon ship.

A misleading article published earlier in the year in a newspaper concerning the transfer of an appendicitis-stricken sailor to another ship, tended to give an impression that Red Star liners carried no staff physicians. The transfer was made to a ship only sixteen hours from its home port, more favorable for the patient, as his own steamer was bound for New York.

From this recent rescue, it is plainly evident that Red Star liners not only carry a ship's doctor, but very capable ones besides as Dr Kort Zinner's able treatment of the rescued man has proven

United Air Lines Places Big Order for Engines

United Air Lines has purchased sixty-eight Pratt & Whitney Wasp 14-cylinder engines, the largest order ever placed for engines of 1,000 horsepower or more for commercial planes. It was announced recently by W. A. Patterson, United's president. The engines are now being installed in United's new \$3,000,000 fleet of twenty-eight twin-engined Douglas transports, including fourteen and twenty-one passenger planes, and sleepers, for its New York-Chicago-Pacific coast route. The order was placed after competitive engine tests in one of the new twelve-ton Douglasses.

These engines, the only twin-row powerplants in use on passenger land planes, are similar to those used on the trans-Pacific clippers and on high-powered military and naval aircraft, including the world record-breaking



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Those who contemplate a visit to Miami Beach, either for a short stay or for the season have the personal assurance of Theo DeWitt that the Fleetwood will be the finest spot in Miami Beach this coming winter season. All rooms are outside rooms, with plenty of ventilation, overlooking beautiful Biscayne Bay, with the city of Miami in the distance, in one direction, and the Atlantic Ocean in the other.

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United officials said the fourteen-cylinder type motor will make United's fleet the most powerful passenger land planes in this country. They are rated at 1,000 horsepower, with maximum available horsepower, 1,150 per engine. United's Douglasses will be the only commercial planes in this country equipped with fourteen-cylinder engines—the nearest approach of other engines being nine cylinders

Using only 62 per cent of available engine power, United's new Douglasses will cruise more than three miles a minute, and with a cruising range of 1,500 miles, will enable United to reduce its present coast-to-coast flying time. Reserve power of the two-row engines will enable the airliner to maintain full flight with only one of the two motors in operation. It can climb two miles with only one engine in use. With both engines operating, the fully-loaded plane can climb 1,000 feet per minute, and attain a ceiling of 24,300 feet.

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* * *

Atlantic Coast Line's Florida Winter Service

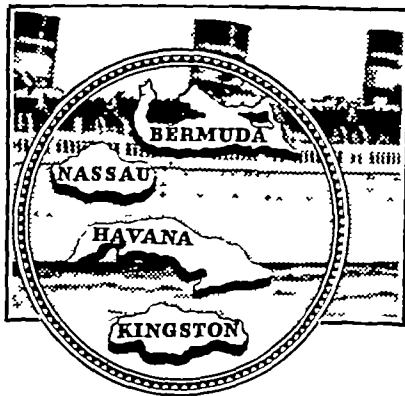
Very fast schedules, made possible by excellent condition of the continuous double-track, rock ballasted, safety-protected railroads over which Atlantic Coast Line trains operate, bring all Florida and the South only one-night-out from Boston-New York and intermediate points en route

Reduced fares for winter tourist tickets with liberal time limits, the low cost for shipping automobiles in connection with passenger tickets, reasonable cost of living accommodations, and the wonderful out-of-door winter climate make a trip to Florida and the South this winter not only desirable but possible to all of average means

"Florida Special"—Will begin its 50th consecutive season from New York at 1 15 P M January 2, 1937, and celebrate its Golden Jubilee by featuring its famous recreation cars with hostess, orchestra and games and with quickened schedule making it the first less than 20 hour train New York to Florida and 27 2/3 hour train New York to Miami. All-Pullman equipment Recreation Car Library-Observation, Bedroom, Stateroom Compartment and Section sleeping cars and dining cars

"Gulf Coast Limited"—Restored from New York at 2 05 P M, December 10, 1936, with through

QUEEN OF BERMUDA JANUARY CRUISES



A PRIVATE BATH with every room is reason enough to choose the brilliant Pleasure-Planned "Queen"! But there are plenty of other reasons: sweeping play-decks, swimming pool, theatre, dance deck, cocktail bars, sumptuous lounges. Plus the favorite itineraries, including Bermuda and the most popular ports of the West Indies!

JAN. 6th—8 DAYS

10 BERMUDA and HAVANA \$105 up

JAN 16th—12 DAYS

10 BERMUDA, NASSAU, KINGSTON, HAVANA \$150 up

INCLUDING PRIVATE BATH

5 HOLIDAY SAILINGS 10 BERMUDA

Dec. 19, 22, 24, 26, 29, \$60 up ROUND TRIP

CONSULT YOUR LOCAL TRAVEL AGENT
or Furness Bermuda Line, 34 Whitehall St.,
or 634 Fifth Ave., New York

FURNESS

LEADS THE WAY FOR
WINTER VACATIONS

The Hotel IMPERIAL



BETTER
ACCOMMODATIONS
AT
LOWER RATES

A Hotel of refinement—
situated in the best resi-
dential section of Hamil-
ton, convenient for
Swimming Dancing Golf,
Tennis Boating Sightsee-
ing and Shopping Near
all Churches

VERY MODERN ROOMS
THE BEST FOOD
COURTEOUS
ATTENTION

Rates \$4 00 to \$7 00 per
day, including meals

Reservations Your
Travel Agent or write
GEORGE TUCKER
NORTH Manager

AMONG THE BEST IN BERMUDA

Your HOME

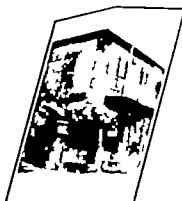
IN BERMUDA
Sheltered and secluded
spacious grounds and
peaceful Nothing typi-
cal of hotel life no haunt-
ing gratuity hunters—just
a place to make yourself
truly at home with home
cooked delicious meals,
and rates as comforting as the
atmosphere Fifteen minutes to
Hamilton by train or ferry and
just a short walk to Coral and
Elbow Beaches



BEAU SEJOUR
PAGET WEST

FINE LIVING

All the comforts of home at most moderate
rates Impressive large rooms pleasant
environment and ideal
location — adjacent to
places you want to see
and things you want to
do The best of foods
and the finest of fellow
guests



Snow Plant
Inn

ST GEORGE

The GLENCOE PAGET WEST



FAVoured

by many prominent Amer-
ican visitors for its high
standard of hospitality
and cuisine its chic and
comfortable surround-
ings, and its proximity
to the centre of social
and sport life in Ber-
muda

Rates on application to
CATHARINE M
JOHNSTON Mgr

A SOCIAL RENDEZVOUS OF REST AND SPORT *in Bermuda*

FOR DISTINGUISHED PEOPLE

Offering a unique combination of the services, facilities, and comfort
of a large hotel, and the casual simplicity, personal attention, and
privacy of a well-run country club

Located near principal points of interest, providing ready facilities
for all sports and recreative activities A modern hotel in every sense
of the word, with club atmosphere, finest cuisine and bar, on the water,
best obtainable beds, its own golf course, and a matchless location
Rates are uniform for all guests without discrimination Reservations
can be made through better travel agencies, through our New York
Office at 500 Fifth Avenue, or direct — attention of Jack Peacock
Green, Managing Director

The CORAL ISLAND Club

3,400-mile non-stop flight with flying boats from the Canal Zone to San Francisco

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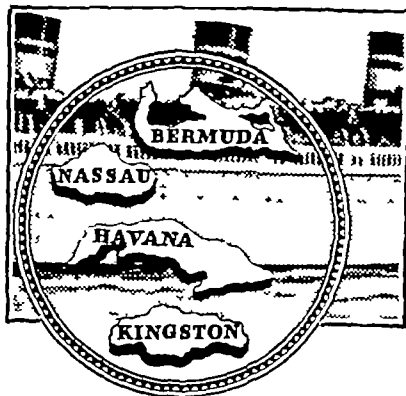
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Dec. 19, 22, 24, 26, 29, \$60 up ROUND TRIP

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LEADS THE WAY FOR
WINTER VACATIONS

The Hotel IMPERIAL



BETTER
ACCOMMODATIONS
AT
LOWER RATES

A Hotel of refinement—
situated in the best resi-
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Swimming Dancing Golf,
Tennis Boating Sightsee-
ing and Shopping Near
all Churches

VERY MODERN ROOMS
THE BEST FOOD
COURTEOUS
ATTENTION

Rates \$4.00 to \$7.00 per
day, including meals

Reservations Your
Travel Agent or write
GEORGE TUCKER
NORTH Manager

AMONG THE BEST IN BERMUDA

Your HOME IN BERMUDA

Sheltered and secluded,
spacious grounds, and
peaceful. Nothing typi-
cal of hotel life no haunt-
ing gratuity hunters—just
a place to make yourself
truly at home with home
cooked delicious meals
and rates as comforting as the
atmosphere. Fifteen minutes to
Hamilton by train or ferry and
just a short walk to Coral and
Elbow Beaches

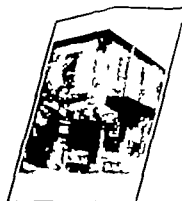


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PAGET WEST

FINE LIVING

All the comforts of home at most moderate
rates. Impressive large rooms pleasant
environment and ideal
location — adjacent to
places you want to see
and things you want to
do. The best of foods
and the finest of fellow
guests



Snow Plant Inn

ST GEORGE

The GLENCOE PAGET WEST



FAVOURED

by many prominent Amer-
ican visitors for its high
standard of hospitality
and cuisine its chic and
comfortable surround-
ings, and its proximity
to the centre of social
and sport life in Ber-
muda

Rates on application to
CATHARINE M
JOHNSTON, Mgr

A SOCIAL RENDEZVOUS OF REST AND SPORT *in Bermuda*

FOR DISTINGUISHED PEOPLE

Offering a unique combination of the services, facilities, and comfort
of a large hotel, and the casual simplicity, personal attention, and
privacy of a well-run country club

Located near principal points of interest, providing ready facilities
for all sports and recreative activities. A modern hotel in every sense
of the word, with club atmosphere, finest cuisine and bar, on the water,
best obtainable beds, its own golf course, and a matchless location.
Rates are uniform for all guests without discrimination. Reservations
can be made through better travel agencies, through our New York
Office at 500 Fifth Avenue, or direct — attention of Jack Peacock
Green, Managing Director

The CORAL ISLAND Club

sleeping cars for central, south and west coast Florida resorts

Boston Section The "Gulf Coast Limited" will have a New England section beginning from Boston at 8 30 A. M., December 10, 1936, which will carry through sleeping cars daily for Miami and east coast resorts, St Petersburg, Tampa, and Sarasota, and intermediate resorts in all central Florida. New England is thus given its first one-night-out train to all the principal resorts in Florida.

The "Gulf Coast Limited" provides fast and convenient service to and from Savannah and Nahunta, Ga., (for Sea Island and Brunswick). Dining cars and coaches carried on New York and Boston section. Library lounge car between New York and St. Petersburg. Daylight trip through Georgia and Florida.

"The Miami"—Restored December 10, 1936, from New York at 9 40 A. M. through to Palm Beach, Miami and other Florida East Coast resorts. Arrive West Palm Beach before noon and Miami 1 40 P. M. Lounge, bedroom, compartment, drawing room and section sleeping cars, dining cars, coaches. Connects at Miami with P & O steamer for Havana.

"The Tamiami"—Continued until last trip December 9 from New York, December 11 from Florida. Fast one-night-out train with sleeping cars for both coasts and central Florida and gives morning, mid-day or afternoon arrivals. Connects at Miami with P & O steamer for Havana and at Tampa with P & O steamer for Key West and Havana. Lounge and dining cars. Coaches. Leaves New York 10 30 A. M.

"Havana Special"—Continued in service, with close connecting service at Penna. Station New York, leaving Boston at 4 00 P. M. Connects at Tampa with P & O steamer for Key West and Havana, and at Miami with Pan-American Airway planes for Nassau, Havana, West Indies Central and South America, and with P & O steamer for Havana.

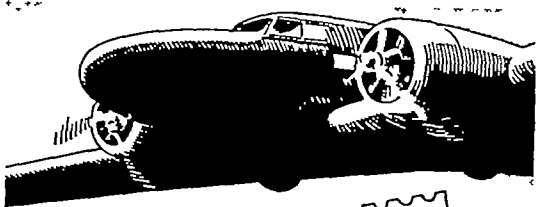
"Palmetto Limited"—Continued in service between New York, Washington and Wilmington N. C., Charleston, S. C., Augusta and Savannah Ga. Sleeping cars to all points. Dining car and coaches.

Mid-South Resorts. Sea Island, Brunswick, Ga., served by the "Florida Special," the "Gulf Coast Limited," "The Miami," and the "Havana Special" to Nahunta, Ga., Thomasville, Ga. via "Havana Special" to Savannah thence A. C. L. No. 57, or on above trains to Nahunta, Ga., thence private motor arrangements.

The Atlantic Coast Line has the co-operation of the New York, New Haven & Hartford R. R., the Pennsylvania Railroad, the Richmond, Fredericksburg & Potomac R. R., the Florida East Coast Railway and the Pullman Company in providing this fine train service.

Paris Exposition to Feature a Section on Medicine

A special section of the 1937 Paris Exposition will be devoted to medical demonstrations, discoveries and developments. The professors Gosset and Roussy, in charge of this division, state that emphasis will be placed on the scientific character of modern medical methods. There will be three large pavilions dedicated



Doctors prescribe flying UNITED—the fast, pleasant, and economical way to travel

to LOS ANGELES—SAN FRANCISCO

Visit both cities at same fare

5 FAST FLIGHTS DAILY from the East. Overnight, "Morning-to-Midnight", Daylight Flights over Salt Lake, Zion Canyon, Boulder Dam

to PORTLAND—SEATTLE AND PACIFIC NORTHWEST

DIRECT THROUGH-SERVICE from New York, Chicago and many eastern cities. Overnight and Scenic Daylight Flights. The popular, pioneer route.

NEW YORK—CHICAGO

9 Flights a Day

United offers you fast "commuter service". Your choice of morning, afternoon, evening, night flights.

FOR TICKETS, RESERVATIONS—

United Air Lines Ticket Offices, Travel Bureaus, Telegraph Offices

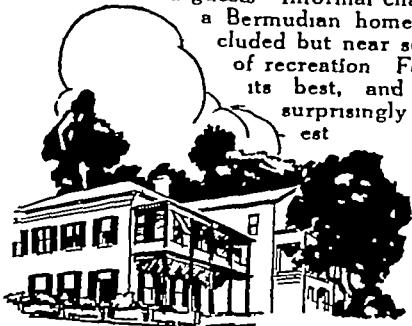
★ UNITED AIR LINES ★

Fastest, shortest between the East and most Pacific Coast cities

in BERMUDA it's

The ARGYLE

A few selected guests Informal charm of a Bermudian home Secluded but near sources of recreation Food at its best, and rates surprisingly modest



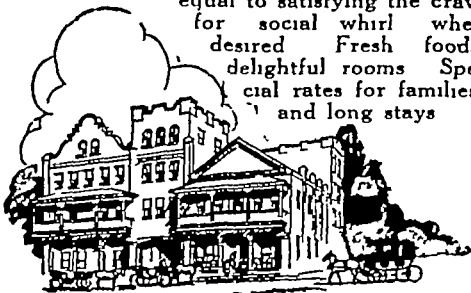
FREE FROM DISTRACTIONS

A private hotel accommodating only a small select clientele, free from the distractions and social obligations of hotel life A most ideal retreat for those desiring or requiring a restful atmosphere, and the finest of nourishing fresh home cooked food. Rates reasonable and furnished on application to the manager—P W McNeill

Victoria Lodge
OVERLOOKING VICTORIA PARK
HAMILTON, BERMUDA

THE AMERICAN HOUSE

Nothing formal—just primarily for rest and freedom from conventional rules, yet equal to satisfying the crave for social whirl when desired Fresh foods, delightful rooms Special rates for families, and long stays



The GLADYN

Everything essential to comfort, rest, and well-being is provided for a limited number of discriminating guests A cuisine that assures well-balanced and tasty meals

The ROYAL PRINCE



Thoroughly modern appointments Excellent rooms, service, and cuisine, at most moderate rates Located in the heart of the social and commercial center of the islands, and next door to everything, yet on a quiet street in the capital city, Hamilton

The SUMMERSIDE "WHERE SPRING IS ETERNAL"

Golf—Bathing—Fishing—Boating—Tennis—Horseback Riding and less strenuous diversions Home cooking to suit guests, and rates as pleasing



The WESTMEATH Guest House FOR REST AND COMFORT

A big, distinctive residence Liberally equipped with private bathrooms, adjoining large, bright, well-furnished rooms Three acres of beautiful gardens Special rates on application

Address N STANLEY CONYERS



FOR FURTHER INFORMATION—
WRITE TO INDIVIDUAL HOTEL OR DIRECT TO THE JOURNAL

"The Healthiest Spot ON EARTH"



Many years ago a committee of medical men seeking an ideal location for a great health center chose the site of St. Petersburg as "the healthiest spot on earth."

Today thousands of people from all parts of America hold the same opinion. The Sunshine City presents a combination of health factors which has few equals—mild climate, sunshine 360 days a year, clean sea-air, fresh foods of every kind, and a delightful outdoor life. Come for a vacation this winter and enjoy life. For booklet write J. P. Scott, Sec'y, Chamber of Commerce—



ST. PETERSBURG FLORIDA

play days are pay days in FLORIDA

Empire of Sunshine

The Best Prescription:—

Take a Holiday

Bathe in warm surf tumbling over white sand beaches. Golf on verdant courses—palm bordered and flower-scented. Fish with the lords of the deep for your quarry. Relax and be rejuvenated under Southern skies!



FIVE FAMOUS TRAINS

with morning, afternoon and evening departures from Pennsylvania Station (P. R. R.), New York. Through service from Boston. Also a new non-stop train from Washington 9:00 A. M. daily, with early morning arrivals at Miami, Tampa, Sarasota, St. Petersburg.

R. S. VOIGT, General Eastern Passenger Agent
16 East 44th Street, New York City Tel. MUrray Hill 2-0800

ATLANTIC COAST LINE

The Standard Railroad of the South

LAUREL in the PINES

ON THE LAKE AT
LAKEWOOD N.J.

LAKEWOOD boasts a climate incomparable for its short distance from New York. The Laurel in-the-Pines, one of America's finer resort hotels, is thoroughly equipped to care for those who need a bit of sprucing up and who more than that desire recreation and entertainment to ease their minds from convalescent chatter.

The sun decks the cuisine (Dietary Laws), the pine laden air the outdoor sports all aid to revitalize.

A real tonic both for you and your patients. Reasonable American Plan Rates.

FRANK SEIDEN MANAGEMENT
New York Office
Park Central Hotel—Room 324

Telephone
Circle 7-8000

appearing Nightly
JOE HAYMES
and his Orchestra
with
BARRY McKINLEY

Broadcasting from the
hotel over WOR.

In addition
HEADLINE
ARTISTS
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SPECIAL
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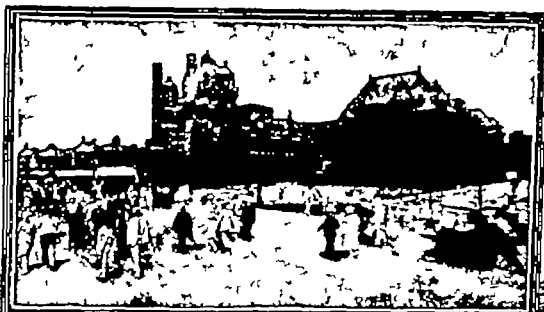
Marlborough-Blenheim

ATLANTIC CITY, N.J.

REST . . . CHANGE . . . CONVALESCENCE

Ideal oceanfront location—no steps to climb—open to the fresh sea air and maximum sunshine . . . spacious decks (afternoon tea and bouillon served) . . . two heated ocean solaria . . . library and game room . . . sea water in all baths . . . wholesome, tasty cuisine.

OWNERSHIP
MANAGEMENT



JOSIAH WHITE & SONS
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CENTRAL BOARDWALK—OVERLOOKING PARK

AMERICA'S MOST EXCLUSIVE WINTER RESORT HOTEL



The BON-AIR

AUGUSTA, GEORGIA

'where it's Indian Summer all Winter'

Augusta is renowned for its marvelous climate
send your patients. Come yourself

400 OUTSIDE ROOMS—AMERICAN PLAN

Season Jan 9th to April 10th—Write for booklet

JOHN F. SANDERSON President

FREE GOLF TO WEEKLY GUESTS

STEAMER BOOKINGS



for Cruises and other sailings may
be arranged through the—

TRAVEL DEPARTMENT

New York State Journal of Medicine

33 W 42 St., N Y C —CHickering 4-5570

to save time and trouble

t. i. d.

"Three times a day" does not have to be prescribed for guests of the Flanders—for no one who has ever sat down to a meal here, ever neglects his "t. i. d." But it's not the excellent food alone that makes this the outstanding family hotel of the "World's Playground"—beds like those at home, comfortable places to lounge indoors and out, and friendly types of guests both young and old, also help make it the preferred seashore hostelry. As convenient to all points of interest as it is to all vacation budgets. Same family management 35 years

AT THE FLANDERS

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ATTRACTIONS



LIFE . . . More Abundantly

The Traymore RE-CREATES!
The very atmosphere, the quiet
foyers, large sleeping rooms,
broad sun decks, the outdoor
sports and solarium, the Health
Baths and the cuisine—are
ALL uplifting! Rates from \$5
European—with meals \$8.

The
TRAYMORE
ATLANTIC CITY



BENNETT E. TOUSLEY, General Manager

to different branches of medicine and all will contain vivid evidence of their evolution. The Claude Bernard pavilion, for instance, will contain, among innumerable other interesting subjects, a transparent man, illuminated so as to show the principal glands. Every branch of medicine will be represented and whenever possible, demonstrated, whether actually or by motion pictures. In the Laennec pavilion, devoted to great clinical discoveries, will be shown old medical instruments, books and relics of the 19th century, as contrasted with those of to-day, and besides, this section of the Paris Exposition will give a remarkable insight as to what may be expected of medical science in the future.

The Chamberlin at Old Point Comfort Announces Improvements

At one of America's finest resorts, modernized facilities are being planned and rushed to make The Chamberlin Hotel the most all-around attractive spot for recreation and rest.

Work is under way on the water front Beach Club with outdoor salt water pool, European Cabanas, and such sports as paddle tennis, shuffleboard, and badminton. All rooms are being redecorated, the John Smith Coffee Shop is something newly completed, and the Jefferson Davis Dining Room will be one of the smartest in the South.

The Marine Roof is being renovated and new linens and china in keeping with the atmosphere of the Chamberlin, are being purchased. All rooms and suites will have new furniture and draperies. Meeting rooms for conventions will be air conditioned.

Bathing, both indoor and outdoor pools, boating, bicycling, croquet, dancing, fishing, golf, health studio, horseback riding, social activities, and sightseeing trips to historic places, are but a few of the many attractions that make this hotel popular.

Atlantic City for Christmas

"Evergreen by day, ablaze by night" is Atlantic City's Christmas slogan as the resort prepares for its greatest Yuletide display.

For years Atlantic City has been noted for its Festival of Light during the Christmas season and this year's display will be even more elaborate than heretofore.

The heart of the business district—Atlantic avenue from North Carolina to Michigan avenues—is a mass of red and green with ropes of lights crossing the avenue to form a color-

HOTEL DENNIS

ATLANTIC CITY

Directly Facing the Sea

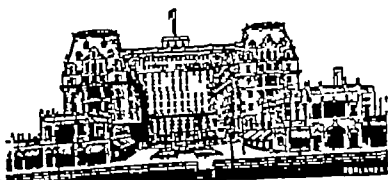
So maintained to provide the necessary elements of a normal, restful existence—great sun decks and solarium—spacious guest rooms with ocean exposure.

Complete health bath department and diet kitchens

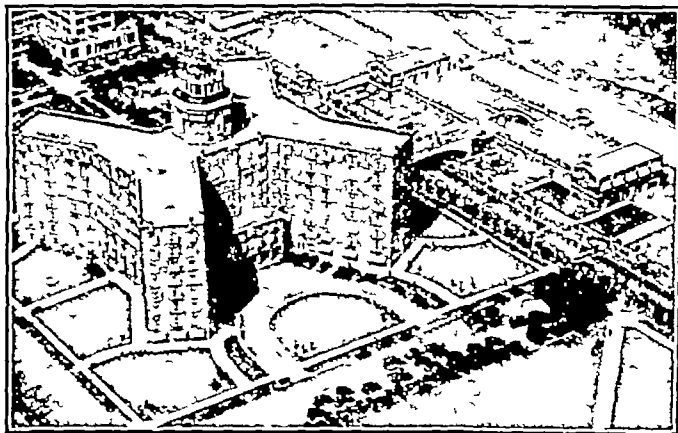
American and European Plans

Three blocks from Auditorium & Union Station

WALTER J. BUZBY, INC.



One
of
**AMERICA'S
FINEST**
Seashore
Hotels



The Hotel Berkeley Carteret is located on the very edge of the Atlantic Ocean, on the finest stretch of seashore to be found in the East.

Equally attractive in Fall and Winter as during other seasons, every facility for rest, relaxation and health building is here in abundance.

Special Arrangements for Members of the Medical Profession and Convalescents

**OPEN ALL YEAR 400 FIREPROOF ROOMS
AMERICAN AND EUROPEAN PLANS**

hotel
BERKELEY-CARTERET
ON THE ATLANTIC AT ASBURY PARK N J

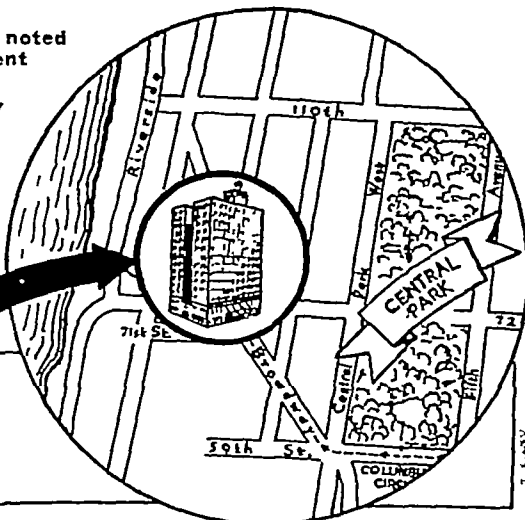
Overlooking the Hudson River and Riverside Drive

Convenient location for doctors A hotel noted for its friendly and refined environment

A quiet place in a busy metropolis Ideally located between Broadway and Riverside Drive Convenient to express subway station, Fifth Avenue buses, and crosstown buses

The spacious rooms are attractively furnished, outside bathroom adjoins each bedroom

Single Rooms \$2 50 per day
Double Rooms \$3 50 per day
Special Rates by Week or Month



HOTEL ROBERT FULTON
228 WEST 71st STREET
NEW YORK CITY



Professional and business men invariably select the Congress when they come to Chicago. They like the comfort of its 950 newly decorated guest rooms, the convenience of its location, overlooking Lake Michigan, the economy of its rates (from \$3 single, \$4.50 double) and the delicious food served in its four great restaurants. Stop here and enjoy the best in Chicago!

Congress Hotel

CHICAGO

JOHN BURKE, Manager

National Hotel Management Company, Inc.
Ralph Hitz, President



Doctors Know This!

Sea air is good for convalescents. With plenty of rest and good food, health is quickly built back. Your patients receive special care at the Half Moon, New York City's only ocean front hotel. Only a short half hour from Borough Hall, Brooklyn, it is easy to reach, without tiresome travel. Modern accommodations, modest rates from \$5.00 per day, American Plan.

SPACIOUS SUN DECKS ON OCEAN
SALT WATER BATHS IN ROOMS
SPECIAL ATTENTION TO DIET
FREE PARKING SPACE
OPEN ALL YEAR



HALF MOON HOTEL

On the Boardwalk
Near Seagate, N. Y. C.

DAVID J. MARTIN
Managing Director

Telephone Mayflower 9 3800

ful canopy above. Pine trees at the base of the street lights and twisted holly will go to carry out the Christmas motif.

The evergreens and electric light decorations along the Boardwalk will be augmented by the displays of the individual hotels. Here is an opportunity for the towering structures to present themselves in an even more colorful style and each tries to outdo the others in originality of their creations.

City parks at Albany and Arkansas avenues and Park Place will each have their huge Christmas trees and other appropriate decorations. The public buildings—the city hall, the railroad station and the high school—will also be fittingly illuminated.

Business houses and private homes, too, vie for honors in elegance of their displays. At the corner of Tennessee and Atlantic avenues, an igloo has been set up in a glade of evergreens and Santa Claus is on hand to welcome the little visitors.

Further down the island, Ventnor, Margate and Longport, residential suburbs of Atlantic City also decorate so that the entire section takes on a Yuletide atmosphere.

Thousands of visitors come from miles around to view the spectacular lighting effects and each night during the holiday period finds a steady stream of automobiles passing up and down the island. Most of the hotels take the guests on sight-seeing tours in their busses.

Special programs are also provided at this time of the year and pine logs burn in the open fireplaces while the guests join in singing Christmas carols. All of the hotels also stage parties for the youngsters with each tot receiving a stocking filled with gifts just as he or she would in their own homes.

Gay parties are planned for the hotel grilles and night clubs while the churches will have special services to care for the large number of persons from other cities who spend the holiday period at the shore.

The municipal convention hall becomes Atlantic City's sport center during the winter months. Ice hockey is on the card every Friday and Saturday night with the Atlantic City Sea Gulls playing leading amateur sixes from all sections of this country and Canada. Home games of the Sandspipers, the resort's representatives in the American Professional Basketball League, are played on Tuesday nights and wrestling is headlined every Monday.

For those who prefer to participate, there is ice skating on the convention hall rink every afternoon and evening, horseback riding on the beach, Boardwalk bicycling, golf on the nearby courses, and hunting on the mainland and meadows as long as the season continues.

Indian Summer All Winter

To those migrating South at this time of the year, Augusta, Georgia, and its environs offers ideal goal. For years it has been the favorite winter residence of the elite. Its remarkable climate is dry, warm and invigorating—not in the least enervating. Days of sunshine in which to enjoy popular outdoor sports or drives through beautiful and fascinating countryside—nights pleasantly cool for restful sleeping—all suggests a healthful atmosphere for both the well and the convalescent.

Here at Augusta is the Bon-Air, one of America's renowned winter resort hotels. All outside, modern rooms, well ventilated, and some with private verandah, a fireproof building throughout, and its exceptionally fine cuisine and service is ample recommendation for anyone going to Augusta for overnight or longer stays.

Free golf is featured for guests of a week or more, and here some of the country's great tournaments are held. In addition to golfing, there are excellent bridle paths, fresh-water fishing, tennis, archery, croquet, concerts, dinner dancing and numerous other things that entertain and provide pleasant vacations.

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Christmas at Asbury Park

City officials and members of the Asbury Park Hotelmen's Association are making preparations for the active ushering in of the winter season here. A new high note in resort festivities is expected to be struck during the coming Christmas and New Year seasons with special programs arranged.

Special mid-winter dance programs have been arranged for the Casino while the Convention Hall will be the scene of free organ recitals twice daily.

Indoor swimming in the huge boardwalk salt water natatorium is enjoying a new vogue this season. Many of the hotel guests and parties of out-of-town visitors are enjoying the invigorating benefits of a daily dip in the tropical-ly heated pool.

Horseback riding through the newly laid out paths in the pine forests just west of the city is also finding increased favor.

Under the direction of Mayor Clarence E. F. Hetrick increased sundeck facilities have been established along the boardwalk. The glass enclosed and comfortably heated solarium are operated under municipal auspices and are attracting increased numbers of visitors daily who enjoy the combined benefits of the salt laden sea air and filtered sunshine. A series of winter pageants is being placed as one of the major attractions for the Christmas and New Year period.

Travel Brevities

DOCTOR Ramon Palacio Posse of Buenos Aires, returned home on the Grace Line's *Santa Clara*, after having made a study of Hospital organization in this country for the Argentine Government.

A GUEST of the St. George Hotel, Bermuda, Dr. Benjamin Press of New York, recently enjoyed a rest at this famous hostelry and island.

PASSENGERS sailing for Bermuda on the *Monarch of Bermuda* recently, included Dr. and Mrs. Samuel Grossman of Massachusetts.

RECENT GUESTS of the Hotel Lexington, New York City, included the following doctors: From New York—Dr. A. W. Bailey, Dr. J. L. Brockman, Dr. Paul Davis, Dr. W. J. Seesselberg, Dr. C. G. Glaser, Dr. H. L. Ungerer, Dr. Wm. Siegal, Dr. O. Knott, Dr. F. W. Bush, Dr. E. Danforth, Dr. J. P. Hagenauer and Dr. C. D. Miller. From New Jersey—Dr. S. P. Holland of the Jersey City Medical Center. From Connecticut—Dr. O. L. Beach, Dr. Theo. Lindstedt, and Dr. B. Dear. From Massachusetts—Dr. D. S. LeBeau and Dr. G. M. Mendelsohn. And from Pennsylvania—Dr. M. Buyer.

Christmas . . . 1936

*The Yule-log's in and set aglow
The candles flicker, while below
The pudding's passed, each makes a wish
And slowly stirs the lordly dish
The hamper then at waited sign
Is brought forth full of Christmas wine*

—Old English Song

Can there be any more acceptable gift than a hamper or basket of good sound wine?

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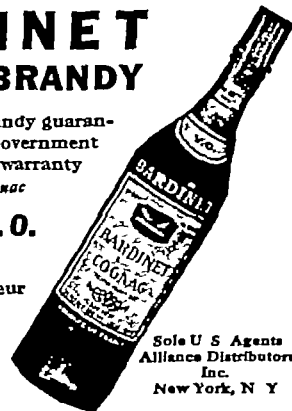
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